Medical Lib.

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association

an., 1924 25 Cents

This *Business* of Housekeeping

The Middle-Aged Woman—What Is She Worth?

AT LAST

A SAFE AND EFFICIENT DISINFECTANT IN ECONOMICAL POWDER FORM

FOR THE FIRST TIME, **IZAL,** the famous Disinfectant and Insect Repellant is being offered in the United States in this form.

USES FOR IZAL POWDER

Toilets
Garbage Cans
Floors
Cellars
Halls
Dispensaries
Hospitals
Street Cars
Chicken Coops
Dog Kennels
Barns
Garages
Factories
Stock Farms
Cattle Pens

IZAL is one of the best known disinfectants in Great Britain and the British Colonies—It is an official disinfectant of the British admiralty. This remarkably efficient disinfectant is now supplied in the United States not only as a milk white emulsion, but also in convenient powder form in 1-lb. shaker cans at 25 cents.

SPECIAL PRICES TO PHYSICIANS, HEALTH BOARDS AND HOSPITALS

Ask Your Druggist or Order Direct

THE ABBOTT LABORATORIES
CHICAGO

New York **Seattle** **San Francisco** **Los Angeles**

Canadian Agent For Izal: Hygiene Products, Ltd., Montreal, Toronto, Winnipeg, Calgary and Vancouver

HYGEIA, a Journal of Individual and Community Health, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $3.00; for Canadian postage add 30 cents, foreign 50 cents. Volume 2, Number 1. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103, Act of October 3, 1917, authorized March 21, 1923.

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association

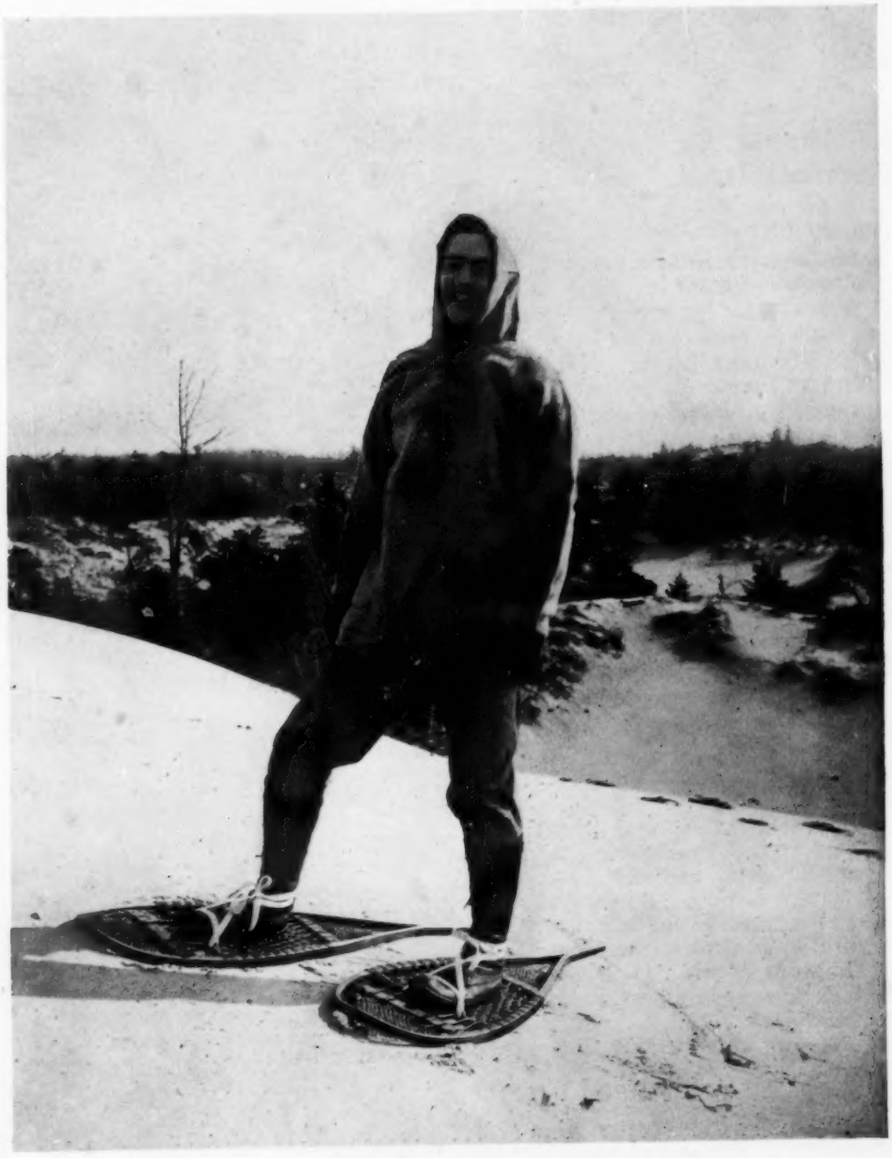
VOLUME 2 JANUARY, 1924 NUMBER 1

CONTENTS

	PAGE
COVER—THE SKI LADY	
FRONTISPIECE—THE SNOWSHOER	2
COLD BLOW THE WINDS *Harry C. Phibbs*	3
THIS *Business* OF HOUSEKEEPING *Mary Koll Heiner*	6
YOUR BABY—HOW HE MAY BE KEPT WELL, PART II *L. Emmett Holt and Henry L. K. Shaw*	11
THE OLD MEDICINE CHEST *William Byron Forbush*	15
THE MIDDLE-AGED WOMAN—WHAT IS SHE WORTH? *Kate Campbell Mead*	17
HOW TO CURE MISS FOUR-YEAR-OLD'S COLD *Louis W. Sauer*	23
THE TEETH AND HEALTH *Virgil Loeb*	24
A ROMANCE OF VACCINATION *I. K. Russell*	28
THE KIDDIE CLOCK *Sarah Comstock*	33
FROM DANGER VALLEY TO SAFETY HILL—A HEALTH PLAY FOR CHILDREN *Lydia J. Roberts*	36
CIGARET SMOKING—HOW IT AFFECTS THE BOY *M. V. O'Shea*	45
THE GREAT RED PLAGUE *Loyd Thompson*	47
PLAIN FACTS ABOUT HEALTH AND DISEASE:	
Health News of the Month	52
Getting the Baby to Sleep	53
The National Mania	53
Spinal Pressure on the Nerves	54
Be Vaccinated against Smallpox Now	54
The Hazards of the Golf Professional	55
Winter's Treasure Chest	55
Electric Shock	55
The Relation of Volunteer to Official Health Agencies	56
JIMMY GERM *Leslie Forgrave*	57
TWIN MAPLES *Margaret E. Greenwood and Eleanor M. Fonda*	58
HEALTH NEWS AND VIEWS	60
BOOK REVIEWS	65
QUESTIONS AND ANSWERS	66
HEALTH REVIEWS	68

Copyright, 1923, by the American Medical Association. All rights reserved. Contributions to HYGEIA *are considered, and, if accepted, paid for. Stamps for the return of unaccepted manuscripts should be enclosed. All communications should be addressed to* HYGEIA, *535 North Dearborn Street, Chicago, Illinois.*

Yearly subscription price, $3.00; for Canadian postage add 30 cents; foreign, 50 cents.



The Snowshoer

If you are seeking a recipe for long life or perfect health, you will not find it in this article.

There is no single recipe for health.

However, if you want to know the zest of life, the relaxation of restful hours, the joy of knowing that you are giving your body a chance to make good—get out of doors this winter.

Cold Blow the Winds

HARRY C. PHIBBS

"BLOW, blow, thou winter wind," thou art just as pleasant and healthful as that which blows on the rarest day in June. The sit-by-the-fires, who shiver as you rattle the window panes and quail as you cast a swirl of snow confetti in their faces, only fear you because they do not know you.

Those who love the open just as much when the thermometer is low as when the summer sun is in the height of his glory are amply repaid in health and enjoyment, and look as eagerly forward to the snow sports of winter as to the water sports of summer.

Need Change from Hot Homes

The fact that in the winter our windows are closed so much of the time and the air in our homes and offices is vitiated so much by overheating, is all the more reason why, at least once a week, we should get out into the open, far away from the pall of city smoke, to a place where our lungs get the fresh air they crave.

How much they miss who fear the open in winter, who, muffled to the ears, dodge from steam-heated office to superheated home! There is a keen enjoyment out of doors, a zest and a tang to the air, a thrill to the exercise, and a healthy glow to the circulation.

Outdoors in winter is just as comfortable and just as much fun as outdoors any other time. It's all a matter of being dressed for the part, and, contrary to the ideas of the uninitiated, you don't need the clothing of an arctic explorer; for even on the coldest day the nip of the chill wind quickly disappears when exercise sends up the circulation and your body makes its own heat, a heat more comfortable even than that from the cheeriest log fire.

A winter hike

Avoid Too Much Clothing

Often you will see people start out on their first hike through the snow encrusted woods, and they will be padded with enough clothing to equip a family of Eskimos. It doesn't take many minutes for the healthy swing of walking to warm them up to such a point that mufflers, mackinaws and the extra padding are pulled off and carried slung across the back as an encumbrance.

Winter outdoors has its own particular beauty. Ruskin, I think it was, remarked that "Nature is most beautiful when she is naked."

You cannot, of course, see winter in the city. You must go out where the leafless trees show lacelike traceries of branch work against the cold gray sky; you must walk under these trees, where dead leaves make rustling music under your feet or whirl and somersault in front of you on the crest of some vagrant wind, like wee brown fairies dancing a welcome.

The underbrush and weeds no longer cloak the good brown earth, and the lack of foliage opens up new entrancing vistas down each woody lane, and

shows up distant hills and alluring pathways.

A little rain or a lot of snow—what care you, when you are dressed to meet it? A patter of raindrops in your face is but a tonic for your complexion. How delighted you will be, ladies, with what rain and wind will do to ripen the roses in your cheeks and redden the carmine of your lips.

And the snow! Climax of winter! Soft and clinging, it puts a new dress and a more beautiful aspect on everything, and makes possible the sports that gladden the heart of the outdoor folk.

If ever you are fortunate enough to enjoy just one day of real outdoor sport in winter, never again when snow is falling will it keep you close to the crackling log or the steaming radiator! The first flickering flakes will be a thrill and a temptation. You will anxiously watch the whiteness spread and thicken and deepen and crust and then, when the sunshine strikes it, glimmer and sparkle and scintillate as if the gods had sprinkled stars over the outdoors.

In the woods in winter

Snowshoeing

This is snowshoe time, when you can take advantage of another Indian invention, the raquette of our French Canadian cousins—the light, lithe frames of wood, with webbing of gut, which, fastened to your feet like giant bearpaws, carry you over the top of the deepest snow. As in other pursuits, there is only one way to learn to walk on snowshoes—and that is to walk on them.

How I envy you your first tramp on snowshoes through a snowbound woodland! It has the thrill of the first time you were able to swim. It puts you walking through the world with your head higher in the air, for you are lifted above the ground by the depth of the snow and can look down and around and about you from a most top-lofty altitude.

Let not the joys of your first trial tempt you to overdo it, for snowshoeing has to be taken in gradually increasing doses. Lifting the snowshoes step by step brings new muscles into play, and if you do too much in the beginning you will get a kink in the leg, which the Canadians call "mal de raquette."

Take a Lesson in Skiing

Or maybe you fancy that sport donation of our Norwegian cousins, the ski (pronounced "shee"). Long wooden runners for your feet, with which, when you know how, you can coast down the hills at express speed, and when you don't know how, tumble joyously into some soft, embracing snowdrift—all of which is good for you.

You must have some one teach you how to use the skis. There is a knack and an art to it. Your feet are strapped to the long runners; this makes your pedal extremities eight feet long and quite likely to get tangled up with each other. On the level you slither along, keeping the skis parallel. Going up hill you side-step up, as shown in the illustration. Going down hill, the skis do it for you; your job is to hold out your arms and keep balanced. The difficulty lies in keeping the skis from getting crossed, for when they get crossed, you tumble; but as you tumble into snow, that only adds to the fun of the thing. It is not so hard—just a little practice and a lot of fun—and you get the knack of it.

Of course, the high jumping done by the professionals and experts is quite a different thing. The ordinary person will not care to indulge in this, but whenever you get a chance to see some of it by all means do so, for it is a thrilling sport.

Skating

More popular, perhaps, is skating. Then, the frozen river makes a new highway over which you can skim with smooth, clean speed, "the poetry of motion," and the hiss of the blades on the glassy surface is a musical accompaniment to the exercise that sets your blood a-tingle.

In our city parks we get skating, but this is not the best form of the sport, because a park pond is often crowded. The real fun in skating

is when you can glide over the surface of some meandering little stream and keep going for mile after mile. So, when next you would a-skating go, look to the streams in your neighborhood and see if they don't provide the best icy pathways for this sport.

When we advocate winter sports, our main appeal is, of course, to the grown-ups. The natural instinct of the child makes him wish to go out and roll and tumble in the snow. Children should not be cooped up indoors during any part of the winter. Keep them out; keep them moving; keep them properly dressed for the weather, and they will not have so many colds and complaints.

The youngsters need the air and exercise, so when you go out to get your share of it don't leave them home.

What Clothing to Wear

Now, as was said before, you must be dressed for the part; and wool is the material on which to place the main reliance. Get woolen underwear and woolen overclothing, woolen gloves, woolen cap or hat, by all means woolen socks or stockings. If you cannot wear the latter comfortably next to your skin, put on a pair of silk or cotton socks underneath.

There are many forms of footwear, but the people in the northwoods, who have to provide for a whole winter of snow, prefer several layers of woolen sock with a tanned moccasin outside, or the woolen socks and what is known as a "Larrigan," that is, a soft leather boot with a rubber sole. This will be found to keep the feet dry and warm even under unusual circumstances in winter.

There is a form of gray shirt or "Parka" with a hood. It is generally called a navy shirt, and is sold by the sporting goods dealers at a reasonable figure. This is an excellent top dressing for winter sports. Several of the persons in the illustrations are wearing them. It will be noticed that the shirt hangs loose and comfortable to well below the waist, and the hood can be drawn over the head for extra protection.

Over the white crust

Up the hillside

The ordinary long overcoat or top coat is altogether out of place when out of doors in winter. It is too long. But the mackinaw form of coat is extensively used and fits in very well.

When you are going out for a whole day, take along a substantial lunch; nothing fussy or fancy, just plain eats. For drink, we recommend hot tea. Just boil a pail, can, tin or kettleful of water over a little stick fire; add some tea, and drink it hot, without milk, the way the woodsmen do. This and sandwiches, with the gang seated around the fire, laughing over the morning's experiences and beaming in anticipation of an afternoon's sport—Oh, boy! What could be better!

When you are resting for a while, don't stand around where you can get chilled. Get into some little hollow or the shelter of a bank, and light a fire. Then you can rest comfortably. You will be surprised how much heat even a small fire will throw out in a hollow, valley or ravine.

Now, get you ready. Get equipped for whichever form of winter sport you prefer, and there are several which we have not even mentioned in this article; take your choice; they are all good. Pick your companions, select your day, and off you go, out into the open, that greatest of sanatoriums, where every wind, when you know how to take it, is a "fair wind."

This Business *of Housekeeping*

MARY KOLL HEINER

SHOULD a mother live *for* her family or *with* it? It may be blind adherence to custom or it may be the lack of a sense of humor that hides the irony of giving the best of ourselves, our efforts, our manners to those outside the family group, rather than those within it.

Charles Lamb in one of his charming essays tells of being invited out to a dinner of roast duck, but on arriving found roast lady.

If having friends in the home means not only "roast lady" but a cross worn-out lady after the friends are gone, such social contacts should necessarily be limited. But might not these contacts be made even more frequent were there more honesty and simplicity of standards in the home?

A Clean House or a Bad Temper?

Mothers, what are you doing the work for? What is the home for? What do you consider the relative value of a house faultlessly clean at the expense of a tired body, distraught nerves and an unstable temper, and of a livable home, a sound body, steady nerves and happy, harmonious relationship?

Soiled dishes to the right, dish-pan directly in front, and drain at the left. This is the correct arrangement for washing dishes.

A well-known efficiency expert has said:

"There is no waste in the world equal to the waste from needless, ill-directed and ineffective motions, and their resulting unnecessary fatigue."

It is unnecessary fatigue that must be got rid of first in the home, since efficiency ceases when fatigue begins.

Probably there is no woman-in-the-home who does not feel that she knows all there is to be known on the "nature of fatigue," particularly after the annual housecleaning or canning and preserving siege. From the standpoint of the effects of fatigue, however, too little attention has been given to the question by this same housewife.

The effects are three: first, a decrease in the power to do work; second, a decrease in pleasure taken in work; and third, a decrease in enjoyment away from work. The first two stages may be deemed self-evident. The third—the loss of ability to enjoy the other things of life when the work is done—this is a phase of the fatigue problem that cannot be disregarded by the enlightened housewife.

Apply Efficiency Principles to Home

Harrington Emerson is the originator of the "Twelve Principles of Efficiency" for industry. If one is to adapt these principles of efficiency to the home it must be recognized at the outset that the organization of industry and the organization of the home are not on a par, and what is beneficial in technique for one is not necessarily a safe guide in procedure for the other. We may, however, with profit interpret some of Emerson's principles in the light of home management. To this end the questions introduced in this discussion are submitted under the first principle, "Ideals," and are left for the individual homemaker to answer.

Do you believe in the honesty and simplicity of family life? How does this influence your scientific management? Do you recognize that it is the spirit and not the furnishings that make the home? That education comes not out of books alone, but through contacts in the home? Might the contacts be more frequent were there greater simplicity of standards? When will you serve food unadorned? When dressed up? Why must an apple be made into a pie, a dumpling or a fluff? What is the ideal Sunday dinner? For whom? Should a mother live for her family or with it?

Use Common Sense

The second principle is governed largely by the preceding one. Common sense settles the question, "Am I going to master my work or let my work master me?" Common sense keeps the machinery running smoothly, prevents the

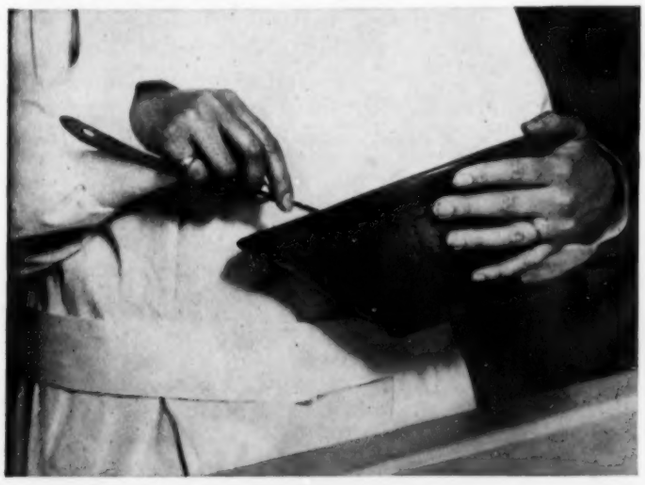
wastes from friction. Common sense recognizes the cumulative effects of fatigue; balances exertion with rest and stops in time regardless of the work undone or of the neighbors. This doesn't imply squandering time or slovenly methods. It means thinking in time; doing the work when vigor is high and effort low; it means doing the work when it may be easily done: running cold water at once on the knife used with onion or lemon rather than scouring the knife an hour later; running cold water at once on the egg beater, the vegetable sieve, the grater, the milk bottle; removing ink stains, fruit stains and milk stains when they occur; hanging up clothes when removed.

Common sense helps to decide the relative value of a woman's time in various capacities. When is it better to buy bread, when bake it? When send the laundry out, when do it? When buy baby clothes, when make them? Is the baby's chance for health increased by having the clothes hand-made by its mother? Will you sit or stand to do your work? Will you wash dishes three times, twice or once a day? Will you wipe dishes?

Be Willing to Try New Methods

The third principle of "competent council" advocates keeping up with improved methods, availing oneself of federal and state bulletins, and of the results of research wherever possible through home economics conventions and periodicals. A necessary prerequisite in applying this principle is obviously an open mind, a willingness to drop old and useless detail and to give the new method a trial.

Principles 4, 5 and 6, standard conditions, standard operations and standard practice are the crux of scientific management. The application of these principles means planned work rather than an adherence to habit.



The right and wrong methods of holding a mixing bowl. Don't hold the bowl close to the body, but rest it on the table, tilting it at an easy angle for mixing.

The method may be summed up as follows:

1. Analyze the situation.
2. Divide the task into its elements.
3. Eliminate all superfluous motions.
4. Train yourself in the combination that seems best.

Use Large Muscles instead of Small

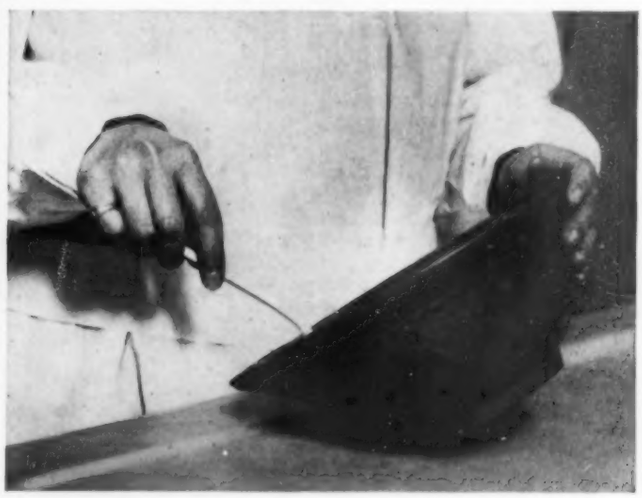
Find the big way, the quick way, the best way. To this end large muscles rather than small must be used. Small muscles tire more rapidly, they should be saved for delicate work. Give preference to wrist and arm muscles rather than finger muscles wherever possible through such processes as the following:

For getting into the crevices, in window washing or paint cleaning, a cloth wrapped about a broken clothespin calls into play larger muscles and saves the index finger. A dover egg beater is meant to be a labor saver, multiplying speed through the principle of the cog wheel. However, because the small handle is grasped so tightly and the lips are pursed so hard, the use of it often proves wearing to many women. If the fingers were used merely to guide the handle and the arm muscles made to work, the lips would probably not be pursed so hard and the worker would probably not become so tired. A long handle used wherever practicable gives this same advantage.

In potato peeling, if the thumb is used as a lever, or brace against the potato, the finger muscles may be spared through a coordinate pulling down of the arm muscles. The thumb is also spared the unsightly little cuts.

Speeding Up Potato Peeling

A time study carried out on this problem, applying conditions of scientific management, reduced the time spent on peeling 20 pounds of potatoes from three hours to 20 minutes. The first day of the study, the individual was left entirely to her own resources. She began with 20 pounds of potatoes at 2: 30 o'clock. The result was unstandardized conditions, unstandardized



operations, and the consequent corollary—unstandardized practice. She stood to work, had a knife not particularly sharp nor particularly suited to the peeling process, paid no attention to space relations between the peeled and the unpeeled potatoes and the parings; held the potatoes tight and worked her finger muscles to such a degree that after a two and one-half hour period, assistance had to be rendered to finish the potatoes for dinner that night.

The next day an attempt was made to (1) analyze the potato peeling job; (2) divide the job into its parts; (3) eliminate all superfluous motions; and (4) to train herself in the combination that seemed best. By the end of the week the standard record of a pound per minute (not including removal of eyes) had been attained.

Standard conditions required the best type of equipment and the best arrangement—a sharp knife, well balanced, flat-sided handle, short blade with curved off point; correct working height, sitting posture, proper relations between peeled and unpeeled lots.

Standard operations required the elimination of all unnecessary reaching, bending, lifting and the use of the thumb as a support so that the arm muscles gradually came to be trained.

Standard practice required the continued applications of the preceding combinations that seemed best. The potatoes were washed as one process, peeled as one process and eyes removed as one process. This latter type of procedure illustrates a division of scientific management in common use in industry.

Repeat, Don't Interrupt, Motions

Rhythmic or repeated motions rather than broken, interrupted ones are an integral part of the program. Silver cleaning, dish washing, ironing, salad and sandwich making are a few of the processes simplified by this system. In

Nothing is so irritating to the housewife's nerves or so wasteful of her time as dull, badly shaped knives, such as the three shown above. The best knives for kitchen use (shown at the right) are of tempered steel, sharp, round-handled or with flat-sided handles, and are curved off at the point.

silver cleaning, for example, the motion used in cleaning a knife is of a different type from that used in cleaning a fork; larger muscles can be used with the knife than with a spoon. If the task is divided into its elements and like parts carried through to completion, rather than making constant readjustments, both time and energy may be saved.

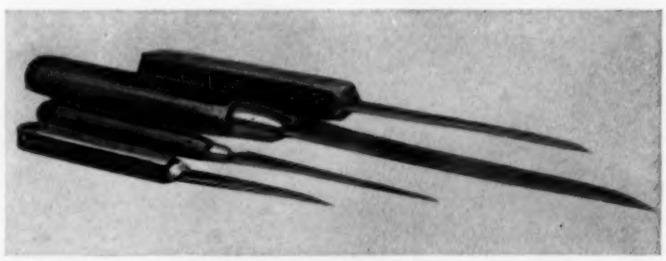
Sandwich making, as ordinarily carried on, represents a typical interrupted-motion process, consuming an inordinate amount of time. If, instead of spreading butter on the uncut loaf and completing each sandwich individually, all the bread is cut at one process using a sharp and properly adapted knife, all the slices matched and spread out in one process; next all those to the left spread with creamed butter in one or two strokes rather than many mincing ones, using a spatula or flexible spreader, and those to the right spread in the same manner with the filling; lettuce added to all as one process and mayonaise applied to all as one process, then the halves folded together, stacked in groups of three or four and cut, the effort as well as the time is reduced markedly.

The same type of analysis may be applied to ironing of clothes, beginning with the hanging on the line, the manner of taking down, folding, etc. The time necessary to fold down six dozen double diapers for one small child was cut from 45 to 20 minutes through the application of this method.

Let Gravity Help

Still another injunction toward reducing effort is to let gravity do the work wherever possible. Place celery, onion, nuts, etc. flat on the cutting board and apply the method used in the daily practice of any hotel chef. A large sharp knife, the handle in the right hand with the point held firmly in the left, the mincing and pushing down with the right in a rapid fan-shaped direction, materially increases speed and reduces effort. We should probably be compelled to pay a higher rate than we do for hotel vegetables were they prepared by the housewife method of holding one piece at a time in the air and performing on each with a small and, doubtless, dull and inefficient knife.

Resting the cake-mixing bowl on the table instead of holding it against one's self; working from the top to the bottom in window washing, letting the arm muscles work by swinging down



rather than using tightly clasped finger muscles to push up with the cloth; and shoving across rather than carrying around heavy equipment are further examples of the same thing.

Don't hold one carrot at a time in the air and slice at it with a small, dull knife. The woman in the figure below is preparing her vegetables in the quickest and best manner and is not disfiguring her thumb with innumerable small cuts.

"Coordination of working processes" is the term used to cover the placing of equipment and the routing of work. It suggests the concentration of supplies and of equipment on the basis of the process performed, viz., having the bread box, the bread board, and the bread knife in one rather than in three places, a demand rather upsetting to the old ideal of "order." The new ideal is to have arrangements such that as much work as possible may be carried on in one locality, giving the least waste of effort in passing from one operation to another. Through intelligently routed work no steps are retraced in the process.

Routing of Work Saves Time

The general rules for routing are: from right to left, from top to bottom and from the outside in. Dish washing is a common example of the first rule, so often not applied, thanks to architects and plumbers. With the dish washing process properly routed, soiled dishes are to the right of the worker; the dish-pan directly in front, while the drain is to the left, so that no retracing or reaching across is necessary with the handling of each dish and cup and saucer. The same thing is true in the preparation of fruits and vegetables. String beans may serve an example: Since the right hand does the snipping, the refuse pan should be placed to the right; the supply of vegetables in the center and the finished product to the left.

Best Method in Window Washing

Room cleaning and window washing serve as good illustrations of the remaining rules—from top to bottom and from outside in. Window washing may serve as an admirable application of many of the processes advocated. Working from top to bottom and from outside in, the worker lowers the top pane, stands on the window sill (inside) and letting the arm swing washes as much of the outside top pane as she can comfortably reach; while the top is in its present position she raises the lower pane and by the reaching down process cleans as much of the outside of this pane as she can comfortably reach.

Without pushing either pane clear to the top, she next sits on the outside, finishes first the unreached portion of the upper pane, pushes that up to stay and then proceeds to the lower section. This done, the inside of the window is taken care of. In this way no unnecessary pulling, reaching and retracing are practiced.

Have Sink at Proper Height

In addition to the proper space relations between equipment, the matter of proper adjustment of the height of working surfaces must be considered if one is genuinely interested in preventing fatigue, since we know by the laws of physics that every change in working level increases the amount of work done, the greater uniformity in height of working surfaces the less unnecessary work is done or the least waste effort is expended. That more work is actually done under conditions of improper height adjustments has been shown through energy expenditure experiments carried on in the office of Home Economics, U. S. Department of Agriculture.

Using standard operations and standard practice, a subject five feet, six inches tall, weighing 134 pounds, worked with sinks of varying heights. A close record was made of the heat energy required in working at the various sinks under observation.

When the height from the top of the pan to the floor was 30 inches, 32.3 calories per hour were used for the process. When the sink was raised to 37 inches the calories needed went down to 24.9; raised to 40 inches, 20.3 calories were required which was the optimum amount for this worker, viz., it represented the height of least effort. Raised to 42½ inches the caloric

requirement went up to 22.6; while at 46½ inches the caloric requirement was 22.9.

Thus it may be observed that a surface too high requires a greater expenditure of energy than one properly adjusted but that a surface too low is very much worse than one too high. The best general height is one which keeps the worker's arm bent at a right angle at the elbow. This position insures a straight back, good poise of body and less fatigue.

The remaining principles of efficiency are (7) dispatching; (8) scheduling, and (9) reliable records. These have been so thoroughly dinned into the housewife's willing ear that only a word need be said at this time.

Scheduling should logically precede dispatching since it is the schedule that is dispatched or put through in the given time allotment. Briefly, a schedule to be of any value must be first of all adapted to the specific needs of the individual family and second, but not the least important, it must be *flexible*. How does one do it?

The first two principles of scientific management should be fundamental in determining what the specific needs of the family are and when the health or social or economic values are of greater moment than a time schedule.

Consider all the tasks to be done; decide on the best order of doing them; and the best time of day for doing them. Then standardize conditions as much as possible, through coordination of working spaces and equipment; and lastly apply standard practice which by your own standardized operations you have found is best.

Learn to Stop Work in Time

Discipline, the tenth, viewed in the light of readjusted values means not the type of discipline that forces one to goad oneself on in work, but the type that forces oneself to stop in time while there is yet health, vigor and the capacity to enjoy life with one's family.

"Fair deal" and "efficiency reward," the eleventh and twelfth, rather overlap and speak for themselves. If "fair deal" is applied, each member of the family shares in the responsibilities as well as in the advantages of family life. In addition to definite duties observed in maintaining the home, each member hangs up his own clothes, takes his own soiled linen to the clothes hamper, and cleans out the wash basin after himself. The reward is the sound bodies, steady nerves and the happy harmonious relationship made possible through "each for all and all for each."

MAKING PLAYGROUNDS OF BACK YARDS

Turn the children out the back door instead of the front, and there will be fewer little white coffins passing through the street, says Harry H. Moore, director of parks and public property in Jersey City, N. J., in an article in a recent number of *The Nation's Health*.

You cannot close every street and were you to put a playground on every corner you would still find children playing in front of their own doors and dashing out into the street in front of passing motor cars after their balls, says the advocate of back yard playgrounds.

Mr. Moore thinks that cities should utilize the open space in the rear of houses and by combining the back yards in every block make suitable playgrounds for the children. Then the children could be turned out the back doors, and the mothers while at work in rear rooms could have them under surveillance.

The plan, as outlined by Mr. Moore, calls for the razing of all back yard fences between lots, the clearing of the ground and the planting of several quickly growing trees, a hedge and some flowers. Thus unsightly and unsanitary spots would be transformed into delightful breathing spots. In such playgrounds could be erected little summer houses or pergolas, sand boxes, swing outfits, slides, basketball standards and other facilities for play. The cost of such improvement could well be borne by the city, Mr. Moore believes. Some such plan is being carried out in Jersey City under his direction.

Your Baby—How He May Be Kept Well

This Is the Second and Final Installment of Drs. Holt and Shaw's Article, the First Part of Which Appeared in the December Issue

L. EMMETT HOLT AND HENRY L. K. SHAW

ONLY clean milk from a clean milkman should be used for the baby, and it should be kept clean in your home. The baby needs the freshest milk you can get, but not the richest milk. If possible, only certified or pasteurized milk delivered in bottles should be used—certified milk when you can get it.

Dipped or loose milk is never clean and never quite safe; dirt and flies are likely to get into it.

When received, the milk should be put immediately on ice and kept there. Warm milk readily spoils and spoiled milk may make the baby sick.

One should never leave an open pitcher for the milkman to pour milk into.

One should never allow milk to stand about the house in open vessels nor on the steps in the sun.

Not only the bottles and dishes used, but the hands of the mother should be clean before preparing the milk.

New rubber nipples should be boiled. All nipples after using should be carefully cleansed and kept covered in a glass containing boric acid or baking soda and water. Once a day they should be thoroughly washed with soap and water.

Bottles should be rinsed when emptied, then kept filled with water. Before preparing the food for the day they should be thoroughly washed in hot suds with a bottle brush and boiled for ten minutes.

During the summer the milk, if not from a certified dairy, should always be boiled or pasteurized. Boiling milk kills the germs and makes the milk safer.

It is easier to prepare the entire food for the day at one time. The proper quantity for each feeding is put in a separate bottle.

The milk may be pasteurized by placing the bottles in a deep saucepan filled with cold water and left on the stove until the water boils. It should then be removed from the stove to a table and the bottles of milk allowed to stand in the hot water for twenty minutes. They should then be rapidly cooled by placing them in cold water and afterward putting them on ice.

When milk is boiled, this should be done in the separate feeding bottles after it is prepared.

A home-made ice box may be made as follows: Get from your grocer a deep box about 18 inches square and put three inches of sawdust in the bottom. Place two pails in this box, one, a smaller pail, inside the other, and fill the space between the outer pail and the box with sawdust. The nursing bottles filled with milk are placed in the inner pail. This pail is then filled with cracked ice which surrounds the bottles. The inner pail should have a tin cover. Nail several thicknesses of newspaper on the under surface of the cover of the box. This ice-box should be kept covered and in a shady, cool place. The water from melted ice should be poured off and the ice renewed at least once each day.

The simplest plan for the preparation of the food is to use whole milk (from a shaken bottle) which is then diluted according to the child's age and digestion. It is impossible to feed a baby by age alone. The weight and the disposition, whether nervous and very active or quiet and placid, must be taken into account.

Beginning on the third day, an average baby of 7 or 7½ pounds weight should be given 3 ounces of milk daily, diluted with 7 ounces of water. To this should be added 2 level teaspoons of sugar. This should be given in seven feedings.

A large child of 9 or 10 pounds may have 5

ounces of milk and 10 ounces of water and 3 teaspoons of sugar.

At one week the smaller child may have 5 ounces of milk and 10 ounces of water; the large child, 7 ounces of milk and 11 ounces of water. To each formula may be added 1½ even tablespoons of sugar. This should be given in seven feedings.

The milk should be increased by ½ ounce about every four days.

The water should be increased by ½ ounce about every eight days.

At three months the smaller child will require on the average 14 ounces of milk and 14 ounces of water; the larger child, 18 ounces of milk and 16 ounces of water, in which is cooked for twenty minutes 2 teaspoonfuls of barley flour. To each formula should be added 3 even tablespoonfuls of sugar. The food should be given in five feedings at four-hour intervals. No feeding after 10 p. m.

The milk should be increased by ½ ounce about every six days.

The water should be reduced by ½ ounce about every two weeks.

After four months the entire food should be given in five feedings, the interval between feedings being now four hours.

At six months the average child will require about 24 ounces of milk daily, which should be diluted with 12 ounces of water, in which is cooked for twenty minutes 2 even tablespoons of barley flour. To this should be added 3 even tablespoons of sugar. This should be given in five feedings.

The amount of milk should be increased by ½ ounce every two weeks.

The milk should be increased only if the child is hungry and digesting his food well. It should not be increased unless he is hungry, nor if he is suffering from indigestion even though he seems hungry.

At nine months, the average child will require about 30 ounces of milk daily, diluted with 10 ounces of water, in which is cooked for twenty minutes 3 even tablespoons of barley flour. To this should be added 2 even tablespoonfuls of sugar. This should be given in five feedings.

The sugar added may be milk sugar, cane (granulated) sugar, or maltose (malt sugar).

A very large baby may require a little more milk than that allowed in these formulas.

A small or delicate baby will require less than the milk allowed in the formulas.

Rules for bottle feeding must be carefully observed; regularity is very important.

From the outset the baby should not be fed oftener than every three hours up to 10 p. m. and one feeding later during the night; only seven feedings in the twenty-four hours.

After three months no night feeding after 10 p. m. should be given; only six feedings in the twenty-four hours.

After four months the time between feedings should be made four hours and only five meals given in the twenty-four hours.

The milk should be warmed by standing the bottle in a tall pitcher of water as hot as the hand will bear.

After attaching the nipple the bottle should be held upside down; the hole in the nipple should not be so large that the milk will run in a stream, nor so small that it will not drop.

The bottle should be held while the child is taking his food.

After feeding, the child should be placed upright or over the nurse's shoulder and patted to allow him to bring up the gas, generally air which he has swallowed. He should then be placed in his crib, but not rocked.

A child should never be played with after feeding.

He should not be allowed to suck on an empty bottle; it should be taken away as soon as emptied.

He should not be allowed to sleep with the nipple in his mouth.

If the baby does not take all his feeding, what is left should be thrown away; never warmed over again for a later feeding.

Unless a child has loose bowels he should be given from one to two tablespoonfuls of strained fruit juice once a day after he is seven or eight months old.

If he is taking boiled or pasteurized milk, the orange juice or the juice of fresh or canned tomatoes should be begun at the sixth month, 2 teaspoons daily, increased slowly to 2 tablespoonfuls.

Once a day after he is nine months old, he may be given squeezed beef juice, beef tea, or plain mutton or chicken broth with vegetables cooked and strained.

When he is ten months old, he may have the grated yolk of a hard boiled egg, a small piece of crisp toast or zwieback or a crust of bread to chew, immediately after his feeding; also one, and after two or three weeks, 2 tablespoonfuls of strained cereal with some of the milk from the bottle upon it just before the bottle is given; and once a day 1 or 2 teaspoonfuls of strained vegetable three or four times a week.

At twelve months, he may take his milk undiluted; the strained cereal may be given twice a day and the amount increased.

The Second Year

During the second year, the child should have four meals a day; hours 6 a. m., 9:30 a. m., 1:30 p. m., 6 p. m. At 6 a. m. only milk is given. Nothing but water should be allowed between his meals.

At twelve months, the baby should be entirely weaned from the bottle and taught to drink milk from a cup.

He may then have cereals twice a day which should be thoroughly cooked and for the first two or three months they should be strained.

He should have four cups of milk daily.

When fifteen months old, he may have daily a teaspoonful, later 1 tablespoonful, of rare scraped beef.

When eighteen months old he may have one half of a mealy baked potato daily and 1 tablespoonful of almost any of the green vegetables when thoroughly cooked and put through a strainer.

Tea, coffee, cider, wine, beer, soda water, and candy should never be given to a young child.

The juice of most fresh fruits may be given after twelve months.

Cooked fruit, such as baked apple or applesauce, may be given once a day after a child is eighteen months old; it should at first be strained.

Stale raw fruits are especially dangerous in the city and in the summer.

The Third Year

For breakfast, the baby may have the juice of one sweet orange, or the pulp of three or four stewed prunes, or two tablespoonfuls of applesauce.

Either a well-cooked cereal (corn meal, pettijohn, oatmeal, rice, cracked wheat, wheatena) salted or with ½ teaspoonful of sugar, with milk; or a soft-boiled or poached egg with stale bread or toast. Cup of milk.

For dinner, he may have a choice of (1) broth or soup (chicken, beef or mutton thickened with peas or rice); vegetables can be cooked in broth and strained. Or (2) white meat of chicken, chop, rare roast beef, rare steak or broiled fish. Asparagus, carrots, string beans, peas, boiled or baked potato, spinach, cabbage. One potato and one vegetable can be taken at one meal. All vegetables should be thoroughly cooked and mashed. Stale or dried bread and butter. Cup of milk. Dessert: baked apple, plain bread or rice pudding, corn starch, custard, junket, stewed fruit.

For supper, well-cooked cereal, bread and milk, bread and butter, stewed fruit, applesauce. Cup of milk. Stale bread and butter or zwieback or whole wheat crackers.

Foods to be avoided are: meats—corned beef, dried beef, liver, sweetbreads, ham, pork sausage, meat stews, dressings from roasted meats.

Vegetables—fried, of all varieties; green corn, cucumbers, raw onions, raw cabbage, celery, radishes.

Bread and cakes—griddle cakes, waffles, hot bread, rolls, sweet cakes.

Desserts—candy, jellies, nuts, pastry, pies, preserves, salad, syrups, tarts, popcorn, peanuts, ice cream cones.

Drinks—coffee, tea.

Things Which Are Bad for All Babies and Young Children

Candy, pacifiers, thumb sucking, soothing syrups, patent medicines, whisky, gin, or kimmel, for supposed colic, dirty playthings, dirty nipples, dirty bottles, dirty floors, painted toys, toys covered with hair, and those which have

loose parts which may come off and which the child may swallow, waterproof diapers except for temporary use, moving picture shows, violent rocking, bouncing and rollicking play at any time, play of any sort after feeding, kissing the baby on the mouth either by the family or

by strangers, testing the temperature of the baby's milk by taking the nipple in the mouth, sucking on empty bottles, sleeping on the mother's breast while nursing, sleeping on the bed with the mother, spitting on handkerchief to remove dirt from baby's face, sneezing and coughing in baby's face, allowing a person with a cough or a cold to hold the baby and allowing any person with tuberculosis to take care of the baby.

A baby is not a toy or a plaything, but a great responsibility—his health, growth, and happiness depend largely on his mother.

Special Summer Rules

Food—More important than all else is not to overfeed, especially during very hot spells.

A nursing baby should have fewer feedings and be given water freely.

For a bottle-fed baby the food should be diluted from one-third to one-half with boiled water and water given freely between feedings.

In neither case should the feedings be oftener than once in four hours.

If the bowels become loose, all food should be stopped at once and medical advice sought. A diarrhea should never be allowed to run on for days because it is thought the baby is teething.

Clothing—The chief thing is to keep the baby cool and comfortable. In the middle of the day only the lightest clothing should be worn, often only a napkin is necessary. It is equally important during cool mornings and evenings that the body is well protected.

Skin—Baby's skin is very sensitive and sunburn is quickly produced unless special care is taken to protect the body and the head from the sun's rays.

Prickly heat, one of the most annoying things of summer, may usually be prevented by having only linen or cotton next the skin, bathing frequently and the free use of toilet powder.

Bathing—Not only should the baby have his morning tub, but usually one at night also. On very hot days a third one at noon before the midday nap adds much to his comfort. A large handful of bran may be added to the bath water if there is a tendency to prickly heat.

Fresh Air—In the hottest weather the baby is kept indoors in the middle of the day and given his airing in the early mornings and in the later afternoons and evenings. If he cannot be sent to the country he should spend as much time as possible in the park or on day excursions to the beach.

Napkins—Soiled napkins are a source of danger. They should be placed at once in water and washed as soon as possbile.

Flies and Insects—Their bites cause much discomfort and may be a means of carrying disease, therefore the baby's crib or carriage should always be carefully protected by netting.

Nothing is more important in keeping a baby well than to have him under the supervision of a doctor. He should be seen at least twice a month during the first half year and after that once a month until he is two years old. This should be the rule even if baby seems to be perfectly well. The object is to keep him well.

ASSAULTS BY SNEEZING

"Why is it that warnings are so urgently posted against expectorating and that nothing is said about coughing and particularly about sneezing?" asks a San Francisco attorney of the California State Board of Health.

"In the case of expectoration the sputum is placed on the floor and there is only the slightest danger that any active organisms it may contain will be brought in contact with the sensitive membranes of others while they are still alive.

"In the case of sneezing the sputum is sprayed into the air under circumstances specially favoring its reception upon the sensitive membranes of persons who may be near by. This is particularly true under conditions as they exist in public places, and public conveyances.

"On the train and ferry on my way to my office from Berkeley the other morning I was sprayed by no less than seven different people no less than eight times. Of course I came down with a filthy cold and the worst of it was that it was communicated to my wife and baby daughter in spite of my precautions.

"Why does public opinion make so much of ordinary assaults which result in transitory bruises and make nothing of assaults by sneezing? In the last five years I have received over twenty colds, two influenzas and a double pneumonia by being sneezed on in public places.

"Can't something be done to emphasize the danger of sneezing on people as well as the danger of expectorating on floors?"

The Old Medicine Chest

WILLIAM BYRON FORBUSH

A RABBIT'S foot, a cold potato for rheumatism, and a dead man's tooth for toothache," the Doctor was saying, "are the only remedies that it seems safe for the layman to prescribe. They cannot kill—or cure."

The family physician had been ministering to Mrs. Josslyn's son Bob, whose slight malady had been aggravated by a dangerous "household remedy" that had been suggested by a friend. And now Mrs. Josslyn was showing the Doctor her new home.

"I like it," the Doctor said, as he was completing the survey. "It is as beautiful as I knew any home would be that you would plan, and it has all the values in a home that a physician could ask for. The site is high and dry, the rooms are sunny and airy, your toilet arrangements and your sewerage are perfect, and your heating and ventilating systems are the latest. Let's see what you have here." They were standing in the master's bathroom, and the Doctor happened to turn to a small white cabinet on the wall.

"Open it," said Mrs. Josslyn, smiling, "and give us some suggestions. It is our medicine chest."

The Doctor opened the door and took out one or two bottles. He held them up to the light, smelled the corks, looked at the labels, and then remarked, "Throw them all away."

"Why, Doctor, what do you mean?"

"I mean what I say. Half of this stuff is so old that it isn't safe, and the rest is so old that you have forgotten what it is for. Throw it away. The best medicine chest has nothing in it but a teaspoon, provided you live near a good drug store."

The Doctor knew what he was saying. The other day I happened to open the cabinet where we keep medicines in our house, and I remarked to my wife that it was lucky we are all well. "There is nothing here that I would dare to use," I said, "except the ice pack. It is a good thing this cabinet is nailed so high the children can't reach it."

You know what the family medicine cabinet usually contains. It is the repository for every small article that does not belong in the jewel box or the tool chest. Here are salts that have lost their savor and strength, corkless bottles and bottleless corks, atomizers with no bulbs, and syringes with leaky connections, several syrupy mixtures without labels, and rusty razor blades that are relied on for all the household surgery. Poisons are set here with nothing to distinguish them outwardly from specifics and remedies that have become poisonous by evaporation. Here is the potency of infection, blood poisoning, prostration, and sudden death. The cabinet is unlocked, it is accessible to everyone, it is poorly lighted, its contents are unclassified, and it is not equipped with directions or indexes of any sort. One trembles to think what might happen if a frightened mother should try to minister relief in an emergency at night from this museum of medical antiquities.

"People who would never think of prescribing for a sick cat or dog," the Doctor continued gently, "will vigorously and boldly administer a complicated course of treatment to a child."

"But," replied Mrs. Josselyn with considerable spirit, "it isn't that we are careless of the lives of our children, but that we understand them; we know what diseases they are predisposed to, and we are sometimes as wise and as successful as the physician, who knows a lot of children superficially and none of them thoroughly."

"Possibly there is some truth in what you say," the Doctor acknowledged. "But you must agree that a child may suffer from a

disease that he has never had before. And in such a case, like the present one, an imperfect diagnosis and an unwise medication together may make trouble."

Since no ailment that is protracted over a night can be safely regarded as minor, the safest recourse is the physician. His telephone addresses posted on the bath room wall would be safer for most of us than an array of bottles whose contents we do not know.

When a family insists on retaining a curative arsenal, certain "Don'ts" are imperative:

1. Don't save or use old remedies. No more dangerous economy can be imagined than this. Some medicines lose their strength, others on evaporation become dangerously potent. The physician may have prescribed for you under given circumstances a remedy or a dosage that would be perilous for you to utilize under different conditions. It is really criminal to administer to children unknown remedies intended for adults. It is always precarious to give remedies intended for one individual to another. There are, for instance, at least a dozen causes for headache. It is quite conceivable that a heart depressant taken in case of a headache by certain weak persons might cause death. Indeed, it has happened. A prescription should never be refilled without the physician's specific order, and a supply of a medicine should not be kept in the house unless in a chronic illness when it has been prescribed for continued use.

2. Don't store "samples." Patent medicines are generally worthless and are occasionally dangerous. A remedy that has behind it no authority from a physician and no guarantee of a reputable druggist is doubly dangerous to experiment with in an emergency. Old "corn-cures," "tonics," and "sleeping powders" are especially to be avoided.

3. Don't treasure remedies borrowed from the neighbors. Probably the neighbors don't know what they are recommending, and certainly you don't. They may leave with you some medieval mixture, some coal-tar knockout, or even some active poison, all with the best of intentions.

4. Don't keep any derivatives of opium. The effects of certain forms of opium are almost miraculous. The suddenness and sweetness of the relief make them treacherously dangerous. Few persons realize how soon the most enslaving of all evil habits may be formed, or how frequently they are formed innocently. Once when I was traveling abroad, I was attacked by a most distressing cough, for which I sought and found relief from a physician. When I returned home I was boasting of this marvelous remedy to the family doctor. I was saying that I had used the refilled prescription frequently since my return. "If you take this medicine, Doctor, you *can't* cough." "Let me see that medicine," the Doctor said suddenly. He read the contents on the label. "It's a wonder you ever coughed again," he added grimly. "But don't refill that prescription. It contains four derivatives of opium." In a "family medical book," published less than thirty years ago, five medicines containing opium were recommended to be kept in the house. Among these was paregoric, which seems to have been fed to almost all babies then.

5. Don't store poisons. It is unnecessary to do so. The number of pathetic deaths from mercury bichloride is considerable. Wood alcohol has no place except in the garage. If poisons are kept, they should be put into blue bottles with corrugated surfaces, and labeled.

6. Don't mix the medicine chest and the machine shop. If you use vaseline to oil your electric fan, keep one bottle in the shop and another in the medicine chest. Cotton used to wipe the car may be thrown on the shelf in the shop, but the absorbent cotton in the medicine chest should be kept sealed. I suppose nobody has ever found out what to do with used razor blades. At any rate, they do not belong in the medicine chest. The safest plan seems to be to put them in a closed box on top, and once a year to bury the box deep in the ground.

Supposing we have had a thorough house cleaning and have emptied the old chest of all its antiques, what shall we put back?

A clinical thermometer, tested with the physician's as to its accuracy, a hot water bottle, an ice pack, a standard laxative, an antiseptic solution, some cooking soda or essence of peppermint for acid stomach, some common salt to use in a gargle or a douche, and a first aid kit seem to be about the limit of what is required.

All boxes and bottles of remedies should be marked with name, use, dosage, and date of purchase. They should be tightly closed, the bottles preferably with glass stoppers. The contents should be looked over and renewed twice a year.

The simple preparations named are not suggested as a complete outfit for self medication. Neither would I recommend, unless on the far frontier or on shipboard, the standard family chests. "Trust in the Lord, and keep your bowels open," is about as far as it is wise for us to go, for ourselves or with our children. No effort should be made to enlarge the functions of a common remedy. And—it must be repeated—medicines should not be cut down, like old trousers, in the effort to fit them to the children. Whatever we do in an emergency or a fresh illness should be with the conviction that it is something that we can confess with a clear conscience to the physician when he arrives.

The Middle-Aged Woman: What Is She Worth?

KATE CAMPBELL MEAD

THE middle-aged woman: How old may she be? Has she had her forty-fifth birthday, that most interesting of all dates, or is she fifty and does she prattle of her grandchildren or try to make believe they are her own? Is she the painted lady who lives to play bridge and talk only of theaters, restaurants, and beauty parlors? Or is she the stern critic who thinks that the young people of today are going to the dogs because they seem the quintessence of frivolity? Or is she still bringing up her husband and wishing she had been his mother, and doing all the housework for the little brood who need eternal watching and never ending mending and feeding thirty hours each day? Is she weary of the constant interruptions of telephone, grocer's boy, milkman, and neighbors who would tell the latest gossip or borrow the latest dress pattern? Or is she running the church sociable and mothering the lame, the sick, and the lonely? Or is she the older woman who acknowledges her age with pride and is happy with her knitting and the latest novel, active in the woman's club, and ready to discuss the latest international news? Or is she happiest when she is sadly discussing the modern lapses in social morality and the lack of vitamins in the food of the submerged tenth of the world's children?

The woman who is not yet middle-aged needs to read this paper more than the woman who has reached middle age, for on her care of health now, her cultivation of talents, and her interest in the world outside her home depends her value to the community when she has passed the fortieth year.

The woman who is now middle-aged can take warning to care for herself before it is too late.

And the woman who has passed middle age can look back and appreciate this evaluation of the years that are gone, made by a woman physician.

Whoever the middle-aged woman is, she of the country differs from her of the city. The farmer's wife has probably run on a single track for so long that it is impossible for her children to change her gage and pry her loose from her old habits. If she is a city woman she steps lively in order not to be suppressed by her family. If she is unusually clever she is on numerous committees and belongs to several august boards of directors with real men. But whether she is from the city or from the back woods her reaction to her environment depends on her health. If she is not so alert as her husband it may be on account of indolence, mental or physical, but, after all, is not health at the bottom of all happiness or misery? This brings us down to the question: How much is the middle-aged woman worth, physically, psychically, and financially?

Is the middle-aged woman junk? Physically, has she learned to conserve her strength so as to accomplish more than she did when her children were small? Has she learned the relative values of motions? Psychically, has she lost more than she has gained? Has she waived her right to independent thought and become musty, or has she grown dogmatic or fretful and porcupiny? Financially, does she spend more than she should, or does she know the value of each dollar, and is she still in the race, a keener and a more intelligent business woman than in her earlier years because of a healthy mind and a healthy body?

Let us answer these questions by taking into account the middle-aged women whom we know and by asking some friendly man what he thinks of them. Men say that they like to talk with a bright middle-aged woman better than with young college alumnae. Her years of experience have ripened her judgment, she is keen, and her advice is sound on all the topics of the day, provided—"Aye, there's the rub"—provided she has kept her wits nimble by something besides bridge parties, shopping, and the never-ending details of housekeeping. Physically, she is worth as much as the sum of her circulation, digestion, and nervous stability, plus education. If in each of these respects she reacts normally to her environment, she is a tremendous power in the community, and men generously acknowledge her superiority. Financially, they say that what a clever woman of middle age has to sell is 100 per cent. worth buying because it is preeminently practical. Dr. G. Stanley Hall, in writing of the general state of confusion in the financial world, says: "Self indulgence, profiteering, the losing sight of the general good in the interest of the individual—these can only be met by a great

widespread process of sublimating self into altruistic impulses, and in all the multifarious ways in which this can be done the world now turns, as never before, to woman and demands of her, not merely assistance and cooperation in man-made devices for general betterment, but demands of her a new leadership." Which, translated, means that a healthy mind in a healthy body makes a middle-aged woman valuable.

But if the woman of fifty is not well, what is the reason for her ill health? If at fifty she feels old something is wrong, but if she looks older than her years she is to be pitied. Rouge and hair dye are of no avail except to make her ridiculous. People talk about a change of life at fifty, meaning an uncomfortable change with nervous symptoms, imaginary "ails," rheumatism in its many forms, and disorders of the digestion, circulation, and what not. Our older teachers of gynecology, in lecturing on the menopause, laid the cause of the ill health of the middle-aged woman to the carelessness of the obstetrician, and the obstetrician laid the blame on nature and the natural lack of nerve tone in woman. It seemed to be the general opinion of physicians a generation ago that though fever from infection during childbirth was rare, the accidents of childbirth were the cause of woman's disability after the cessation of her reproductive years. In fact she was considered obstetric junk that could be repaired at any time, after a fashion; but obviously the repairs should have been made as soon as possible after the damage was done to her tissues in order to save her from the scrap heap of human relics.

Whose Fault Are Her Ills?

And now the question is, should the blame still be laid on the obstetrician if the woman at fifty is junk, or are all medical practitioners at fault for not educating the parents as to the hygiene of their own lives, and the health, and dress, and occupations of their children? Dr. Agnes Vietor tells us that three times as many women as men have flat foot, curved spines, gallbladder trouble and hysteria; and Dr. Robert Hutchinson speaks of some of these women of fifty as "abdominal women," with their misery and dejection, their flatulence and constipation, their continual suffering from genito-urinary disease and mucomembranous colitis; and we wonder if the eight thousand women who die annually when their children are born are a fiftieth part of the number who are injured during or shortly after childbirth by careless midwifery or by hard work.

Whatever the answer to this question may be, there are multitudes of other invalid women who have never had a husband or a baby, but who are victims of a false system of education that lays stress on excessive neatness in housework, or extreme fashion in dress, or the acquisition of money at the expense of health and good physique. And there are others who have become infected, whether innocently or not, with one or the other of those black plagues, gonorrhea and syphilis, and at middle age their life is misery.

A Typical Sufferer at 50

I cannot refrain here from drawing a picture of such a patient. She smiles affectedly when she says that she has a "frightful backache and those bearing-down pains"; she is fat, but she says she "can't eat a thing and never sleeps"; and when asked what her trouble is, she answers smartly: "That's what I came to find out," or, "The doctors all say it's change of life." She is a good many kinds of junk. Her eyes are not properly fitted to glasses because she is a victim of the optician or of the itinerant vender of eye glasses. Her nose and throat are swarming with germs for which she believes there is no cure. Her teeth are decayed and her gums are foul with pus. She has palpitation of the heart from faulty digestion, and she will add that she has "gastritis of the bowels," "pneumonia of the stomach," heart disease due to "bulbular" trouble, appendicitis, gallstones, kidney trouble, womb disease, and generally malaria and rheumatism, or "plumbago," as it is sometimes called. Now these diagnoses are either home-made from newspaper advertisements, or they are the hasty opinions of busy practitioners who do not take the trouble to examine the patient carefully, to find out where her various organs are and what they are doing, or the condition of her blood or her blood pressure. She has been given bromides, or pepsin, or quinine—all sorts of tonics—and finally, as a last resort, she has been sent to a surgeon. Many a woman of fifty is a wreck because of careless prescribing or of futile surgery prescribed for its psychic effect. That she needs psychic effects I do not deny. She has no thrilling plans for the future, she knows what position she is likely to hold in society, and she is either placidly content or dissatisfied and soured, ready to blame her physicians, her family, anyone and anything but herself. The rational treatment of these patients of middle age must, therefore, depend on an accurate diagnosis in each case, and, although surgery may sometimes be necessary, we may consider it here as a last resort.

There are advertisements of all kinds of patent medicines to cure the middle-aged woman of her discomforts, and their pernicious influence cannot be too strongly combated.

Such advertisements outdo every other suggestion by their insidious propaganda and often create symptoms when there is not the slightest justification for them. A casual investigation of the testimonials to the value of patent nostrums shows their falsity. One old woman whom I knew, an inmate of an asylum for insane, testified that some "kidney pills" had cured her backache when, as a matter of fact, she never had had either backache or kidney trouble; she signed the testimonial for a consideration.

There is, of course, a cause for some of the discomforts of the menopause. Life's changes at fourteen and at fifty are often accompanied by some systemic maladjustments, and the machinery may need overhauling and adjusting. What are some of the causes of these menopausal hot flashes, suffocating feelings, severe headaches, palpitations and melancholia? Many of them are caused by autointoxication. There may be errors in the secretion of the salivary glands due to inflammation of the gums, possibly pus pockets at the roots of the teeth, and inflammation of the tonsils and throat. The woman is careless in cleaning her mouth and in brushing her teeth, or she bolts her food before mixing it with saliva, or she eats irregularly and when overtired. Often the food is neither well chosen nor well cooked; it may have the consistency of rubber or the indigestibility of banana peel and fills the poor stomach so full that no pepsin can get at it, and then the stomach rebels. What wonder? With the stomach converted into a sewer there is nothing for the liver to do but sulk, and so bring on a "bilious" condition which is nothing but autointoxication, pure and simple.

Trowbridge

This food poisoning from perfectly good but ill-chosen food may cause all the symptoms of apoplexy, heart disease, gallstones, and bowel trouble. Chronic indigestion may produce every kind of nervous feeling, and if added to these symptoms are others caused by bad air and a sedentary life, the combination is desperate enough to make a wreck of any middle-aged woman, or man, for that matter.

Such unfortunate persons are not ill by chance. The woman of means is a chronic weakling from unhygienic life as much as is the wife of the day laborer. The rich woman has dissipated too much and paid too little attention to the laws of health and of exercise. The poor woman has worked too hard and taken no time for pleasure; she needs a "spinal thrill" to stir her circulation as often as the rich woman needs hard work. Both of them must get out of the routine and have some healthful pleasure, music, drama, fiction, games. Dr. Weir Mitchell used to say that he could quickly cure most of his patients if he could surprise them with a check for fifty thousand dollars. And there is the story of a bed-ridden invalid who was cured of her invalidism by the present of a shroud, which she decided to wear while alive.

Is she the presiding officer of the Woman's Club, or are bridge teas her favorite indoor sport? Can she discuss the latest news or is she an authority on Mah Jongg?

There are, on the other hand, many cases of inflammation of the sex organs, and old chronic adhesions in the tissues of the pelvis that require the services of the best possible physician or surgeon; but, with the exception of gonorrhea and syphilis that are accidental and generally preventable, the every-day mother ought not to have inflammations or even malpositions of her pelvic organs, for child-bearing is her function and child-rearing her privilege; therefore, if she has proper care during her bearing period she should have no discomforts during her middle age. This is an ideal, of course, that cannot always be reached among the poor nor perhaps among the ignorant rich, because neither has been taught the reasons for not lifting heavy objects or exerting strenuously soon after childbirth. A girl whose strength has been spent in the factory before marriage has no knowledge of housekeeping, and she, like the rich girl, may strain her back or loosen her abdominal organs and pelvic ligaments, and innocently bring on congestion and varicose conditions that make her wretched at the change of life.

Must Beware of Cancer

Until all these wrongs are righted the weary middle-aged mother needs good care and plenty of rest and fresh air. Possibly she may need a carefully prescribed tonic to whip up her bodily functions. In a few cases surgery may be necessary, especially if she has any irregular bleeding from the vagina, or any prolonged white discharge, for it is possible that she may have a beginning cancer, that most dreaded disease of the middle-aged woman. The first drop of blood from the sexual organs after the change of life demands a hurry trip to the doctor and a thorough examination, for no patent medicine and no watchful waiting will ever cure a cancer. Any unhealed and irritated sore may become cancerous, any hemorrhage may mean serious disease, and any unnatural condition should be reported before it has time to become serious or everlastingly too late. Fortunately there is no woman in this country too poor or forlorn to have hospital care if she requires surgical or medical treatment. There is radium enough for all, and x-rays and deep electricity for the patients who need such treatment before or after operation, and there are visiting nurses to follow up the patient, so that a death from cancer may mean carelessness and neglect somewhere.

If the woman of middle age would be in perfect health she should have a health examination every six months. She must have her eyes and nose and throat cared for properly; her heart and lungs and kidneys and blood pressure checked up; and she must attend to her digestive system every day without fail. And then there is the nervous system, perhaps the most important of all, for many of her supposed diseases are only nervous imagination or hysteric manifestation of some easily corrected complex. Hysteria has been described as a condition in which the emotions outweigh the intellect and will. It is in such cases that some form of faith cure, or mental healing, or religious treatment substitutes a strong belief in health in place of a supposed pain. An advertisement in a church magazine, "We have the accumulated experiences of over sixty-five years and we guarantee to cure you," has undoubtedly enormous value. The mere sight of a beloved doctor may cure a pain without a single pill. Mrs. Eddy realized this in the fullest degree when she taught her followers how to eliminate fear from their lives. It often seems impossible to consider palpitations of the heart imaginary, but if a good doctor says that they are caused by indigestion there is no cause for fear concerning them, and so a cheerful "never mind" and a glass of hot water will drive the symptoms quickly into limbo. Just as the mother's kiss cures the baby's bump so a sensible "never mind" will cure many a pain in later life.

That the "never mind" theory is not worth a trial must be proved by this physical examination of the woman or man of middle age. If the abdominal organs are out of place, or if the appendix is inflamed, or if there is some repair work to be done on any organ of the body, the proper treatment should be given and then followed by the optimism cure. "Grin and bear it," is a text that has been too often quoted to the middle-aged woman, though one elderly saint told me it had helped her "more often than any other verse in the Bible." Of one thing we are sure, happiness and health go together, and when that combination rules there can be no bugaboo at the change of life, and the middle-aged woman can enjoy the thought that in growing old some of her former cares and worries will fade away and she can smile as she sings with Browning, "The best is yet to be."

How Much Work May She Do?

Granting, however, that the woman of fifty is well, how much work may she do in the next score of years? It is obvious that the amount of work included in the care of a home quite exceeds that in an office. Ask Dr. Langworthy, of the Bureau of Household Economics, how many calories are consumed in sewing, darning, and mending, and he will tell you that it is nine calories an hour more than in quiet thought. As if any middle-aged woman ever had time for quiet thought! Harder work—washing, sweeping, and making beds—

Trowbridge

consumes fifty calories an hour more than office work. Then, too, the inconvenience under which many women work counts for a good deal. A sink that is too low causes 20 per cent. to 40 per cent. increase of energy expended. Who could have contentment of mind under such circumstances? The habit of health comes with peace of mind, but the contentment of the ichthyosaurus and other prehistoric mammals, whose sole object in life was to eat and sleep in peace, is not enviable. Did their enormous size indicate a bigger pain from hunger than we have with our smaller bodies and more complex mode of life? Who knows? If we of today have more worries than they we must also have more pleasures. The healthy woman of middle age has much more amusement in the company of her friends than even the young woman. She can have a dozen men companions because they know she is not anxious to marry them all, and they admire her intellect and generosity of spirit. There may be a few of the "petted Pomeranian" type of woman of fifty who figure in the divorce suits because they are representatives of "ear-ringed vampidity and spectacular grace."

Although women who work in factories have a higher disability and death rate than men, the business woman lives longer than the business man. She stands the strain of stepping lively, eating rapidly, and sleeping lightly better than does the business man. If the hours of factory work were as short as the hours in business and banks, the life of the factory worker would be longer and her output greater. The woman of fifty who works in a factory has not a high grade of

Does she sit as executive in a business concern or charitable organization, or is she happy to pass the hours and days with the latest novel and a constant supply of chocolates?

mentality, but if she is a "good feebleminded" she has adapted her character to her surroundings and has a distinct value to society. Many such women have inherited only mental unbalance from their parents, and under proper schooling they could have become stronger minded. Such a woman was Charlotte Bronté, not by any means feeble in intellect but unbalanced in relation to society. Her father "had the sensitive pride of a self-made man and the uncertain temper of a man ill at ease with his fellows, a hypochondriac, a dyspeptic, an ascetic who was stern, unyielding, cold, jealous even of his children, and he managed to keep Charlotte in bondage to himself, a bondage which she was never able to overcome, nor could she overcome the distrust of all friendships which he had instilled into her being." She was therefore half-child, half-adult, all her life, and she died old in spite of her comparative youth and good mentality.

It is comforting to know that ancestry, for better or for worse, is not the only thing in one's life that counts for high values in old age. If perchance ancestors have been strong, their descendants may be able to "grind their sharpest sorrows under heel."

The singing blood that pulses in each vein,
Warm with the life it treasures to the last,

Holds in its fleeting motion the proud strain
Of un-named heroes lost in the dark past.

Or, alas, it may be that environment creates from good stock only a race of

Plump, good women with noses flat,
Marrowful blessings, weighty and fat.

* * *

"They are merry, yes, when they are not thinking,
But life is nothing but eating and drinking.

Among all these various kinds of junk or treasures of middle age we must take one parting survey of some of the misfortunes. There is the hardworking mother who has "gone to seed" and been laid away in lavender by her daughters. There is the widow whose parents sap her life and think that she should be happy in living only for them, in spite of the fact that her soul longs for freedom. There is the lonely mother whose children have gone away to homes of their own and urge her to live under their roofs and give up her independence forever. There is the maiden aunt of uncertain years who must earn her living by being companion to a deaf old lady or go out as a mother's helper in a family of children. All of these women are lonely for companionship of their own kind. To be of the most value they must get as well as give sympathy and love, and they must have personal freedom of action and thought during at least part of each day. Therefore it behooves parents to cultivate in their children healthful fads as well as vocations so that when middle age arrives the pleasures of life may be as great as in youth.

The young flapper of today would have a nightmare if she should see herself after thirty years as an aimless elderly woman, one sided as a "trivial marsupial animal" or a "beaver industrious, but of the earth earthy"; or, worse still, as a weak, sickly woman with a backache and the blues, and all on account of a lack of the solid foundation of health that must be thoroughly established in youth.

John Oxenham put this problem into verse in a manner that compels the serious attention of every woman; it presents the key to happiness for every age, and especially for the woman of middle age.

To every man there openeth
A way, and ways and a way,
And the high soul climbes the high way,
And the low soul gropes the low,
And in between, on the misty flats,
The rest drift to and fro.
But to every man there openeth
A high way and a low
And every man decideth
The way his soul shall go.

FIGHTING FIRE WITH FIRE

"Very, very slowly, with many a slip and stumble, and many a scar to show for early errors, mankind has reached the point where nature is no longer a thing to fear, no longer a thing to fight, no longer a thing to conquer even, as a rebellious slave; but rather a bountiful mother, harmful to us only when we fail to understand, or venture rashly into foolish feats," says Dr. H. W. Hill in a weekly bulletin of the California State Board of Health.

"The force behind the lightning, the pain and fear of earlier generations, we do not fight or flee from; we use it kindly, gently, almost without thought, to cook for us, to move our coal and furniture, to tell our troubles to our friends. Fire, the terror of animal and savage, we use for countless purposes—it has become the 'harmless, necessary cat' of modern life.

"Disease has been longer than any other of nature's forces misunderstood, fought against blindly, combated without real study. Scarcely 70 years ago did the first real glimmerings of what disease really is strike into the human mind in any practical way. Scarcely 30 years ago did the first real uses of that new knowledge begin to show themselves in remodeling human life.

" 'Cooperating with disease' through understanding of it—a new idea indeed—is the idea which has made the new public health as it has made modern medicine. At first sight this idea strikes us as a suggestion would strike our savage forefathers, that they 'cooperate' with fire or lightning or with Niagara. On second sight it strikes us as just as sensible as furnace heat, or telephones, or hydro; and so it is.

"We now use the forces of disease to cure, and even better, to prevent disease, as we use fire to put out fires with, ice-cold Niagara to warm us.

"True, we do forehandedly estimate and prepare in various ways against the causes of disease which exist in our surroundings, but we do not fear, as did our ancestors, these causes of disease so long as they remain in our surroundings. They are not to us, as they were to our ancestors, things unknown, intangible, able to strike from a distance like the influences of the stars, or devils. We know to a great extent what the causes of most diseases are, physical, chemical, biological; and that they cannot act upon us except by contact with us. We know also to a great extent how to prevent these causes of most diseases from harming us. Thus we may immunize ourselves against some of them, or obviate their coming to us, or best of all destroy them altogether."

How to Cure Miss Four-Year-Old's Cold

LOUIS W. SAUER

This is not written exclusively for Miss Four-Year-Old. It is written for her mother and the mothers of all babies who are defenseless against fond parents and friends. Don't feel that it is your special privilege to kiss the baby!

THE healthy infant or young child is usually happy and content, being companionable and seldom out of sorts. As soon as he is not well, his disposition changes; he is no longer playful, becomes fretful, his smile vanishes and he usually refuses food. The mother often knows that things are not as they should be some time before the seat of the trouble is discovered.

The common cold is the most prevalent illness because it is the most contagious. It is, without doubt, the most important of the acute infections during early childhood, for from it many of the more serious respiratory conditions may develop.

The nose and throat may harbor germs which are relatively harmless as long as the individual's resistance is normal. When the protective substances in the blood fail to act or are not sufficiently replenished, these germs gain a foothold and an infection develops.

These Things Cause a Cold

Resistance to disease, especially to colds, is lowered chiefly by breathing dry, overheated room air; chilling by being dressed too lightly or by exposure to drafts; sudden changes in temperature, especially when perspiring; insufficient sleep; improper food and lack of hygiene; constipation or diarrhea; insufficient fresh air, sunshine and exercise; intercurrent disease (rickets, adenoids, diseased tonsils); and exposure to a person with a cold, by coming near him when he is coughing or sneezing.

"Kiss Aunt Margaret, dear." Loving Aunt Margaret doesn't realize that by planting kisses on the baby's mouth, she may cause this little tot untold discomfort and perhaps serious illness.

A cold is an inflammation of the mucous lining of the nose and throat due, probably in many cases, to a "filtrable virus." These germs are smaller than ordinary bacteria which can be seen by the highest power of the microscope. Sneezing, or a sense of fullness in the nose passages, may be the first symptom. This may be followed by a profuse watery nasal discharge, which later on becomes thick and may contain pus.

A so-called "cold" may be the first sign of measles, whooping cough, or diphtheria, as any of these serious diseases may begin with symptoms resembling those of the common cold. The younger the child, the more likely it is that such complications as middle ear disease or bronchitis will develop.

How a Cold Is "Caught"

Colds may be "caught" by direct contact (kissing or fondling a person with a cold); the germ being in the air—coming within a yard of a person with a cold when he talks, coughs or sneezes; indirect contact—using the same handkerchief, towel or cup that somebody with a cold has used.

In these days everyone knows that it is more rational to prevent a cold than to try to cure it. Children must be dressed properly for the season of the year. Outdoor clothing should not be worn in the house. Infants and young children must be well covered at night. Rooms should be well ventilated and never overheated. The humidity of the air should be increased during the winter by attaching humidifiers to the radiators. The humidifiers

should be filled with water daily. The amount of moisture supplied by most of these humidifiers is wholly inadequate; therefore the humidity of the air in a home should be frequently tested by a wet-bulb thermometer or some other device.

Drafts should be avoided. The child should be hardened by daily outings, sleeping in fairly cool rooms, and the clothing should vary with the weather. People with colds should not come near infants and young children.

Take the child's temperature twice a day. If there is fever put the child to bed and keep him there until the temperature is normal for two successive days. If only one of several children has a cold, isolate him, with the hope of preventing its spread to the other children. Try to maintain an even room temperature of 65 to 72 degrees F. both day and night. Increase elimination by offering water and fruit juices at short intervals. If there is fever, reduce the amount of food and increase the amount of fluids. After all of these things have been done, if fever, pain or other symptoms develop, the best policy to pursue is to consult your physician about the child's condition.

The Teeth and Health

VIRGIL LOEB

ALTHOUGH we have evidence that dental work was done as far back as the time of the Pharaohs, the care of the mouth was not known as a factor in the conservation of health until very recent years. Little restorative work was done in early historic times, although Egyptian mummies have been found with teeth filled with metals. The chief function of the dentists of this era, among whom were numbered blacksmiths, barbers, and other artisans, was to relieve pain by simply removing the offending tooth. The importance of restoring lost teeth in an effort to maintain normal conditions in the mouth was not understood. It was not until about the middle of the last century that an almost phenomenal advancement in dentistry occurred and the science assumed its modern aspect.

The many ways in which the teeth are preserved and in which they are restored either in part or completely by the use of metals, rubber, porcelain, and other materials, is a matter of every-day information. Even the fear of the removal of all the teeth has long since been dispelled because there are very few mouths for which plates cannot be constructed to restore the masticating surface and the physical appearance of the patient; they are usually worn with complete ease and give many persons more comfort than the teeth whose function they supplant.

Treatment of Diseases of Teeth

With the advance in the mechanical side of dentistry came the advance in the treatment of diseases of the teeth. Instead of the removal of a tooth because it was badly decayed or because it was giving pain to the patient on account of disease of the nerve, treatment was directed toward the relief of such conditions, and teeth that previously had been condemned were saved and made to give further service. Particularly remarkable advance was made in the treatment of the root canal, the part of the tooth that carries the nerve.

Since it was known that most of the infections of dental origin are those around the tip end of the roots of the teeth, the greatest amount of skill was used in the treatment of these hair-like tracts after the removal of nerves. Sometimes the nerves had died and were infected before removal was attempted, and the treatment was thus made more difficult. Even with the greatest care, dentists were unable to fill the canals perfectly in every case because of the tortuosity of roots and because the work was done in the dark, as it were. The use of the x-ray, however, had proved of great value in assisting the treatment, since x-ray pictures may be obtained from time to time and the progress may thus better be observed.

Diseases of the Teeth and of other parts of the Body

The discovery of anesthetics of various types made possible many forms of treatment. Development of antisepsis and asepis also aided greatly. While formerly little attention was given to this, it is now common practice to use the greatest care in all treatment of the teeth in order not to cause infections. When infection is found, the infection is treated before removal of the tooth is resorted to.

It was not until about ten or twelve years ago that any great attention was given to the fact that infections about the teeth can cause diseases in other parts of the body. Laboratory experiments and clinical observations at this time established the fact that poisons

generated about the teeth and absorbed into the system through the blood and other channels can cause disease in remote parts of the body. Symptoms and general examination, confirmed by x-ray examination and studies with the microscope, demonstrated the close relationship between the teeth, the tonsils, the sinuses, and the rest of the body. In many cases chronic infections have been found to have their origin in infected areas in or about these organs.

Physicians readily accepted the theory that certain abnormal conditions of the heart and joints were frequently caused by absorption from infected tonsils, but the relation of such conditions to defective teeth was not so readily admitted. Scientific investigation during the last few years, however, is convincing evidence that in searching for the cause of many diseases, the teeth and surrounding tissues must be studied as carefully as any other part of the body. In many cases studied, the teeth are the only infected organs discoverable. Many patients suffering from rheumatism, diseased joints, nervous affections, eye affections, and even heart trouble, in whom infected areas about the teeth are found, have been relieved and cured by the treatment of their diseased teeth. On the other hand, many patients have their teeth treated, and even removed, without the slightest relief from suffering. It does not always follow, however, that because patients fail to get results after their teeth have been removed that these teeth were not the cause of the trouble, at least in part. Conditions caused by dental infection may be so far advanced that removal of the primary cause may be of no avail. Often there may be several sources of infection, the teeth being only one. It must also not be forgotten that besides the teeth, the accessory nasal sinuses, the gastro-intestinal tract, and other parts of the body may harbor infection and that any one of these may be the offending member.

Teeth and Mentality

A rather striking relation between the teeth and mentality is found in children. In a city in Ohio an examination of the mouths of the children in four public schools revealed the fact that 97 per cent. of them needed care and attention for the teeth. A survey of about forty of the most backward children in one of the schools was then made to discover the relation of the teeth to the mind. The children were given what dental care was required in each case, and were then instructed in the care of the teeth and the proper mastication of food. Observations made at the end of the six-month period of experimentation showed that the twenty-seven children who had been most faithful in carrying out directions were better nourished, their complexions were clearer, and with the special attention and physical uplift had come a self-respect that made them a desirable element in school. From the standpoint of scholarship a more wonderful result was reported. With due allowance for natural growth, an average improvement of 37 per cent. was found, and in the cases of the worst mouth conditions there was an improvement of as much as 50 per cent.

General Resistance and Teeth

If the mental restoration is so marked in children, is it not fair to assume that there may be a corresponding reaction in the adult? The continued absorption of poisons in the body from any infected part undermines the vitality of the individual and lowers the general resistance, even though it may not cause pronounced illness. If the languor, low vitality and resistance, and general depression are due to dental infection, treatment of the condition may restore normal activity and vigor. Nature has provided a protective mechanism in the blood that prevents, to a certain degree, infection from being distributed through the system, and thus it is that some persons may harbor infection in their systems for years without suffering ill effects. These persons have, as we say, a high resistance. Excesses of any kind, overwork, overeating, or privation, which result in malnutrition, lower this resistance and the blood cannot do its full duty. The mouth cavity normally harbors about forty-five different kinds of germs. Under circumstances unfavorable to health they have excellent opportunity for doing harm.

Extraction of Teeth When Infected

Since areas of infection about teeth may be regarded as sources of general infection, a somewhat radical view is held by some dentists that bad teeth are always a menace to health and that every dead tooth should be unceremoniously extracted. An extremely conservative attitude, on the other hand, is held by others, that most diseased teeth do little harm, and usually can be taken care of without extraction. Just what is a safe and sane view of the problem?

This general principle may be laid down: Whenever there is found any disease of the teeth or gums accompanied by pus, it should receive definite attention, regardless of whether or not the condition appears to be doing any harm to the individual. It is never safe to allow pus to remain in any part of the body, and it is but common sense to remove it whenever and wherever it is found. How radical the method shall be to accomplish this depends somewhat on the

general condition of the patient. If he appears to be in vigorous health, conservative measures may be warranted; but if the patient is suffering from any of the well known general diseases in which pus plays a part, radical measures that assure prompt and thorough elimination of the infection are justified and imperative.

This does not mean, however, that teeth should be ruthlessly sacrificed on snap judgment. Careful diagnosis of the condition of the teeth, based on clinical and x-ray examinations, and search for infection elsewhere in the body, should be made, especially of structures that are frequently the primary sites of infection. Then, with all the facts at hand, determination of the location of the trouble is more nearly possible, and the treatment necessary for relief may be applied.

Decay and Pyorrhea

The most common disease that affects the teeth is caries, or decay. The most common disease that affects the tissues surrounding the teeth is pyorrhea. Decay of the teeth is due chiefly to the action of germs. Although many believe that constitutional conditions, such as malnutrition and other digestive disturbances, have a direct influence in producing decay, it is generally believed that most of the cases are due to local infection. Those who hold constitutional conditions responsible believe that there is a lack of certain salts in the system which render the tooth structure less resistant. Those who hold local infection responsible believe that the gelatinous plaques that form on the enamel at points difficult to be reached with a toothbrush conceal the germs which produce acids that dissolve the tooth structure and form cavities. Cavities increase in size, unless treated, until they encroach on the nerve cavity or even communicate with the nerve itself. Infection concealed in the cavity may involve the nerve and cause its death, resulting in the formation of an abscess or an area of infection about the end of the root. The poisons here generated are carried into the system.

Pyorrhea is caused by both local and constitutional conditions. Neglect is perhaps the chief cause of this disease. Persons who allow a filthy condition to prevail in the mouth are much more subject to pyorrhea than are those who keep the teeth and mouth clean. Deposits about the teeth cause the gums to become inflamed, and thus provide for the germs that produce pus a rich field in which to work. This condition in time causes an absorption of the bony socket of the tooth, the tooth becomes loose, and eventually, unless treatment is instituted, the tooth becomes so loose that it either comes out of its own accord or removal becomes necessary. Certain constitutional conditions also may cause pyorrhea. Diabetes, for example, may cause a lowered resistance of the structures about the teeth, and so make this area much more susceptible to infection. Most cases of decay and pyorrhea, as well as most other diseases of the mouth, can be prevented if proper attention is given to mouth hygiene.

Another disease that attacks the mouth is cancer. Although less prevalent than some of those mentioned, it assumes not a trifling importance when we consider the fact that from 15 to 18 per cent. of all cancers affect the tongue, jaws, and lips. Dr. Bloodgood asserts that from 50 to 60 per cent. of these cases could actually be avoided by proper care and hygiene of the mouth. Although we do not know the direct cause of cancer, we do know that chronic irritation, of whatever type, is responsible for the activity of cancer-producing cells. Irritation in the mouth may be caused by faulty dental work, irritating crowns and bridges, broken teeth, broken roots of teeth, tobacco, and the like, and unless such irritation is corrected the results may be very serious.

Examination Every Three Months

If people understood the necessity of keeping the mouth in proper condition and realized the direct relation of mouth hygiene to health, much of the harm that results from lack of proper care would be obviated. Instead of having the teeth examined once in six or twelve months, an examination should be made every two or three months by a competent dentist. Small cavities and other defective conditions can then be recognized before they have reached a serious stage of development and can be easily and inexpensively repaired. Acute inflammation of the gums can usually be relieved immediately by removal of the deposits or by correction of inferior dental work. In any case, early recognition is important for both prevention and cure.

This regular examination should begin when the child is about two years old and has most of its temporary teeth. If regular examinations are begun at this time and if the mother follows the instructions given her by the dentist, it is not likely that dental disorders will develop. If the permanent teeth show irregularities, a dentist should be consulted in order to have the teeth brought to normal position. This alone may avoid a great deal of future trouble, since the improper striking of the upper and lower teeth causes a loss of resistance, and pockets which collect food matter and harbor infection form about the teeth.

Brushing the Teeth

It is surprising how many people brush their teeth only once a day, and even as

infrequently as every other day. The teeth should be brushed regularly four times each day, once before breakfast and immediately following each meal. In many cases, of course, the daily routine is such that this program cannot be followed, but it should be observed as nearly as possible. Brushing the teeth after a meal removes from the teeth the loose particles of food that would otherwise accumulate between the teeth and putrefy. Following the brushing, dental floss should be used to remove particles of food that even the most careful brushing sometimes does not dislodge.

There are many ways to brush the teeth, but there is only one correct way. The lower teeth should be brushed upward and the upper teeth should be brushed downward, each set independently of the other. In this way, the irritation of the gums which is caused by other methods of brushing is avoided. It is not the harm that results from an occasional irritation of the gums that should be avoided, but rather the cumulative effect of continued irritation from the sharp edges of the bristles in a habitually incorrect method of brushing.

A dentifrice which is smooth and not irritating should be chosen, and should not be used more than once daily. The most that is accomplished from the use of a dentifrice is the removal of stain on the teeth, since food matter can only be dislodged with the brush and dental floss. The too frequent use of dentifrices, especially those which are gritty, causes chronic irritation of the gums and wears down the enamel because of the friction.

Public Dental Clinics

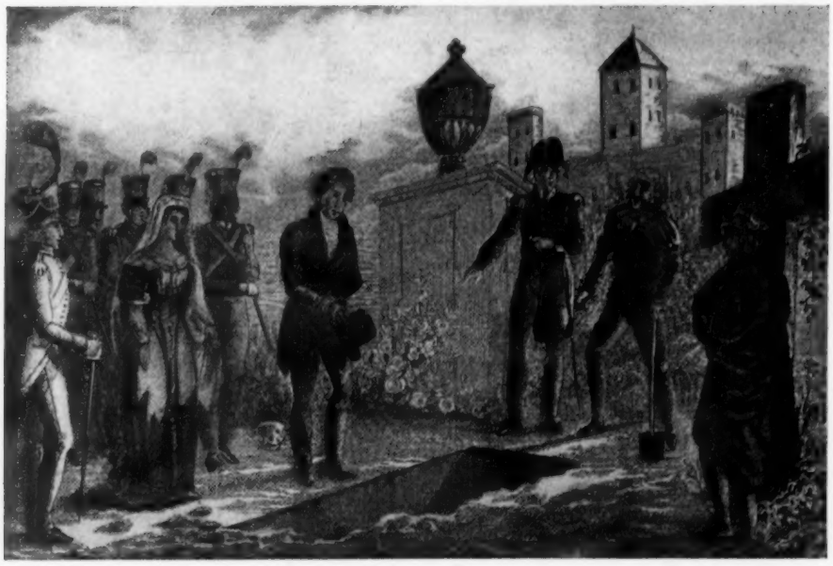
Many modern cities have provided excellent public dental clinics for patients who cannot consult dentists in private practice. Similar clinics also are maintained in dental schools under the supervision of competent men, and in some public schools and hospitals. Facilities in most cases are inadequate to care for all those who need dental attention. Every effort should be made to provide for a system that will meet the need. Magnificent buildings and elaborate appointments are not necessary; but what is necessary is cooperation between those who are willing to do the work and those who are able to pay for the establishment and maintenance of efficient clinics.

Quacks in Dentistry

A word of warning against quacks and charlatans and their wares should be given. The public is gullible and only too easily swayed by the arguments of the advertiser. Fake cures now on the market do more perhaps to retard the progress of dentistry than any other one thing. People are prone to accept the easiest way and seek relief in preparations whose manufacturers boast of their effectiveness in order to pad their pocketbooks. The advertised speed of their cures and their cheapness lure their ignorant victims, who usually find in the end that cheapness is sometimes extravagance and that speed is not a time saver. The money spent for fake cures, if used to endow dental clinics, would permit a most valuable and effective work to be done.

Economy in Care of Teeth

Another word, in conclusion, with regard to the great importance of proper mouth hygiene. Do not forget that all the food that enters the body passes over the teeth, and that unclean teeth will make unclean food. Do not forget that much of the air that is taken into the lungs enters by way of the mouth and that in passing over unclean teeth it will itself become unclean. Do not forget that the thoughtful physician considers an examination of a patient incomplete without a careful study of the condition of the mouth, and so reveals the important relation of the mouth to general bodily health. And, finally, do not forget that it is an economy of time and money as well as an addition to personal comfort and happiness to give the teeth careful and regular attention and to have a thorough examination of the entire mouth cavity by a dentist at frequent intervals.



Blinded by the sunlight after months of darkness in his dungeon, James O. Pattie, son of the first carrier of vaccine to the West, witnessed the burial of his father in the prison courtyard of San Diego, California.

A Romance of Vaccination

I. K. RUSSELL

ROMANCE, such as few suspect, lurks behind a great smallpox epidemic in the state of California in the far off days when the Mexicans governed it. Curiously enough, this romance of early California turned on the fame of Jenner, discoverer of smallpox vaccine, although the incidents involved occurred more than sixty years before Louis Pasteur convinced the world of Jenner's success by demonstrating the "how and why" of the action of Jenner's cowpox vaccines.

The two principal actors in this California romance carried with them a little tin dish labeled "smallpox vaccine" along with flint-lock rifles that had seen service in the War of 1812, and beaver traps. This little tin dish should have an honored remembrance in American life.

In those days a medical officer was not sent out with hunting expeditions, but some seasoned veteran packed up such household remedies as were famed on the frontier for curative powers; and, when evil fell upon the encampment, applied these remedies as best his unpractised hand could do.

Kit Carson Plays Surgeon

Thus, when one of the first traders to Santa Fe took the great Highway That Was to Be, leading down from Independence, Missouri, he suffered a broken arm from an Indian's rifle. His messmates brought into service an ordinary meat saw. While some quailed, the coolest in the group, a youngster whose profile in bronze now graces the main entrance to Smithsonian Institute at Washington, sawed off the victim's arm. This youngster was Christopher Carson, and thus he gained his first fame as a plainsman a quarter of a century before he was discovered as the truest rifle shot, most faithful guide, and most skilled Indian fighter of the era of government exploration across the Rockies.

The medicine that these mountaineers took with them often became the basis for rich legends. There was the tale that was heard about many a campfire of General Custer's guides during his famous expedition after Black Kettle, last warrior chief of the Cheyennes.

One of Custer's guides had a pal in a plains' journey who was much afflicted with real and imaginary ills. This man had loaded a burro heavily with every known brand of patent medicine. He took his medicines regularly, in faithful adherence to every instruction on the labels, and in the midst of the desert he surrendered his body and bones to the coyotes.

His companion, who lived to become Custer's guide, examined the burro's burden of bottled wealth, and soon found he could cash in on it heavily. He was in the vicinity of Mexican settlements in the Rio Grande Valley and to these he led his faithful burro.

With a little shingle, bearing the brave legend, "Tom Jones, M.D.," he set himself in business as a doctor, knowing no literature of medicine, save the labels on the patent medicine bottles. He did a thriving business for many months, prescribing according to the bottle labels after patients had explained their symptoms. When the last bottle was drained, the

mountaineer had to go back to his mountains and start out in quest of furs and gold.

From Dungeon to Vaccinator

In such a spirit of carrying self-help in times of trouble, Sylvester Q. Pattie and James Ohio Pattie, his son, set forth into the Western Wilderness in the summer of 1824 and became the heroes of this adventure; they carried with them the little tin dish of vaccine.

When their smallpox adventure started, both father and son, with a score of companions, were jailed in a filthy dungeon in San Diego. When it was concluded, the father lay in a grave hastily dug in the prison yard, while the son completed a tour of California in which he vaccinated every Mission Indian and every inhabitant of every town from San Diego to San Francisco. More than that, the son had an enormous grievance over the question of pay. Later this caused him to write the story [1] of his adventures as vaccinator in the form of a terrific indictment of Mexican rule in California.

The Patties, father and son, after leading a party safely on the hazardous journey to Santa Fe in 1824, talked over plans for more adventures of the kind to which Kentucky pioneers were by nature best adapted. This time the journey was to be down the "Red River and through the provinces of Chihuahua and Sonora through which the Red River ran."

To guarantee themselves against the very fate which later befell them, they provided themselves with an elaborate pass of safe conduct, signed by the Mexican governor of Santa Fe. It was dated September 22, 1827.

Thus began their last great venture down the mighty waters of the Colorado. Wild Indians, seeking to murder the intruders, made of their journey a forced march into San Diego for help. One night as they made their camp on the banks of the Gila River, a tributary stream of the Colorado, Indians raided them with intent to pillage the camp and murder the whole party. All the horses were stampeded, but sixteen men, including the two Patties, escaped by taking to the river in canoes. They were afloat for hours and dared not come ashore. There was nothing to do but let the turbulent river rush them onward wherever it would. It debouched them out into the main current of the Colorado and down that they floated, as refugees, hoping to find succor at the Spanish settlements reputed to be near the river's mouth.

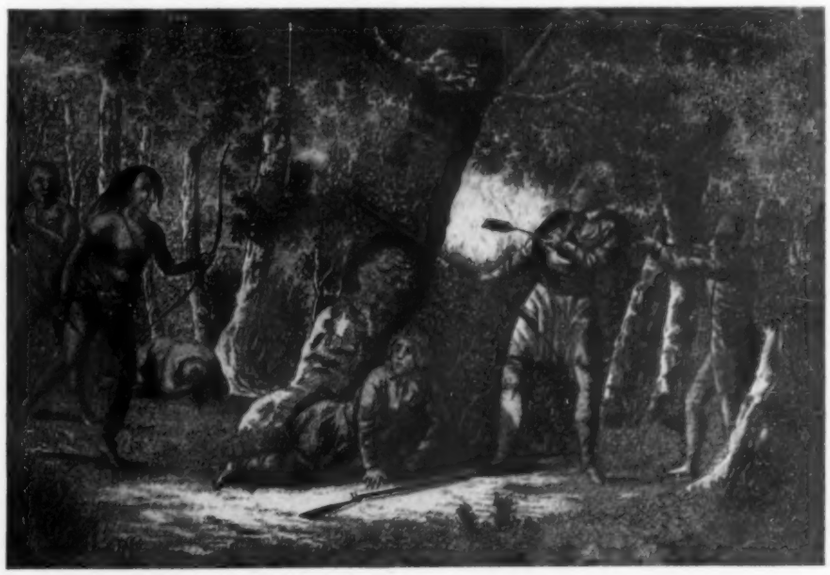
As the canoes bore these strange sailors down the Colorado River, they came at last to the tide-rips near the river's mouth. Tides to them were utterly unknown. They dared not stop, even when Indians on the shore waved to them and told them in sign language that they would surely be swallowed up. At last they realized that by going further they must surely sink and they beat in toward the shore. This time they found the Indians friendly; they smoked with them, and made camp while their Indian friends laughed heartily, for they knew that the next incoming tide would wash these curious white men out of their beds. And this, of course, was just what did happen before the night was over.

Almost Perish for Food and Water

When the waters rose and forced them to a new camp ground, the Indians told them that the Spanish settlements were not near at hand, but many leagues to the northward over burning sands. Thither they started, in a starving condition. They had no alternative but death by starvation where they were, and they did not relish that prospect.

At last after many days, in which they saved their own urine to quench their blinding thirst, and vainly chewed at their bullets in an effort to make saliva, they came within sight of a Spanish mission, the Mission of St. Catherine. Their hearts were cheered—but only for a moment, for a swarthy corporal escorted all of them to the guard house.

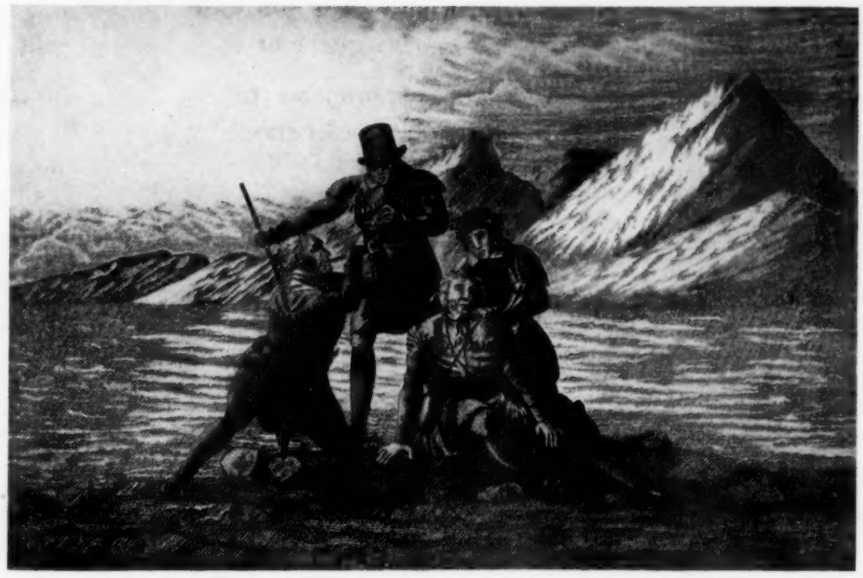
They were offered no food, not even a drink of water with which to quench their thirst.



James O. Pattie was wounded by a Mescalero arrow in one of his frequent engagements with the Indians. The Mescalero were a treacherous tribe of the Apache. His father's salve and a medicine man's poultice are credited with healing his wounds in a fortnight.

1. Pattie's Personal Narrative.

"The cowardly and worthless are always cruel," wrote Pattie of this inhuman welcome. "Instead of the fact of our being completely in their power exciting any generous desires to console and relieve us, their only study seemed to be to degrade and torment us."



One by one members of the Pattie party perished through hunger and thirst. The elder Pattie and Mr. Slover, another member of the party, became too weak to travel further, and James Pattie had to leave them behind. Not far distant, a spring was discovered and James Pattie filled his powder horn with water and took it back to the two men, dying of thirst. Both recovered.

Thrown into Dark Cells

The Americans were forwarded as prisoners to San Diego and locked up, each in a separate cell. There it was that Governor Echeandia had each man searched and relieved of all his valuables. From the Patties they even took away their pocket knives.

As the son was torn away from his father he sensed it was to be forever, and cried out in wild alarm.

"O God," he wrote afterward, when he had pleaded many times in vain to see his father, "of what stuff are some hearts made!"

The General's mansion, for the Governor of California was also commanding general of the state's troops, faced directly upon the filthy guardhouse where the Americans were confined. And in this mansion, as Echeandia looked over the effects taken from his prisoners, he came upon the medicine kit of the elder Pattie. It contained quinine, which later in the gold rush was to be worth more money, grain for grain, to men who often suffered from chills and fever than the gold dust found in such prodigal quantities. In addition to the quinine there was the little tin can of vaccine.

Elder Pattie Dies in Prison

The Mexican governor remained cruel, the captives unhappy. A young girl, whose brother was a prison guard, looked the captives over, after the habit of young girls, and saw that one was a mere boy. She lingered about James Ohio Pattie's cell, and carried messages to his father. One day she brought a message back, written in blood the elder Pattie had extracted from his arm upon a piece of lining torn from his cap. It told the boy he was dying and plead for one last meeting. The girl and her brother carried the plea to the General-governor, but old Echeandia could not relent when he had power to be cruel.

"What are the burial customs of your country?" was the next official communication to young Pattie. The boy was led forth into sunlight that blinded him after many months in darkness, and was allowed to stand beside a newly dug grave while his father's body was lowered into it. Thus perished the first carrier of smallpox vaccine to California.

Once back in jail, the younger Pattie saw no hope but to follow his father's fate. His heart breaking at the death of his father, and only foul clothing, foul food and foul vermin for daily companionship, he little cared when the end might come. But out in the hills something was happening. Indians were falling sick and a plague was making its way into the cities.

Smallpox Epidemic Breaks Out

A Mission priest, even, was stricken. If the flint-hearted Governor had no heart for the Americans rotting and dying in foul cells, he had sympathy for his own people.

He bethought himself of the bit of vaccine taken from Sylvester Q. Pattie. Was anybody alive who could vaccinate people for smallpox? The wily Californian considered he had best ask the old American's son. So the prison doors swung open for young Pattie. He found himself in the Governor's mansion, and he was received with a kindly salute. At first there were some papers to translate—the Governor took his time about coming to the matter of vaccine.

Young Pattie served as interpreter and made many trips between his prison and the Governor's mansion. He plead for the release of his surviving companions, including William Pope, who afterward gave his name to Pope Valley, Napa County, California, and Nathaniel Pryor, former sergeant in the Lewis and Clark Expedition to Oregon.

"Will you use this vaccine of your father's and vaccinate all the people of this coast?"

asked the Governor at last, after some preliminary inquiries in which he learned the young prisoner was an expert with the vaccine needle.

"Yes, on one condition," replied Pattie, "and that is that you release all my companions and guarantee us against rearrest for one year."

"Vaccinate me, at least," pleaded the Governor. "I am afraid of dying from the plague."

"No, not till we are released," insisted the Kentuckian. Pattie went back to his cell. The smallpox continued to spread.

"Carracho," exclaimed the angry General when Pattie still refused to apply the famous Jenner remedy. "Picaro," he added as his wrath rose.

But nearer and nearer came the dread plague. At last the Mexican surrendered to his boy prisoner. He summoned all the Americans, and James Pattie saw them before him again—with long beards, sunken eyes, and haggard countenances.

Pattie Vaccinates the Coast

All were told to go their way, save Pattie, who was instructed to set to work as a vaccinator. On January 18, 1829, he began his work in San Diego. He showed his own vaccinated arm, as evidence of the way the vaccination would turn out. He told how his father had vaccinated him at the copper mines near Santa Fe and how he had been immune during a smallpox epidemic in that vicinity. The people became willing subjects.

In one month Pattie had vaccinated all inhabitants of San Diego. He then started his all-California vaccinating tour. First he "obtained a sufficient quantity of the vaccine matter" from sources he does not disclose. Then he rode to San Luis Rey, a mission 85 miles southeast of Los Angeles. He vaccinated 3,904 Indians and Mexicans at this mission, and took the priest's certificate that he had done the work for his pay. This certificate, with others like it, he was instructed to present at San Jose, when he should arrive there, for final payment. In the meantime he was to receive food and shelter as he went along his way.

The record of his northward journey is a record of the California missions, each one of which is fully described, often with tart criticisms of the padres and their ways. As an ardent Protestant he objected strenuously to the methods of mission control over the inhabitants.

Once Pattie replenished his supplies with "kinepox." At Santa Barbara he vaccinated 2,600 people, including fifty soldiers. At Santa Cruz he vaccinated 650; at San Luis Obispo, 800; at San Miguel, 1,850; at La Soledad, 1,685; at San Carlos, 800; at Monterey, 500.

At Monterey Pattie found himself in the midst of gay life, with bear-baiting as chief sport. He watched Spanish cowboys, or vaqueros, lasso grizzly bears and drag them to bull rings to fight wild bulls. The vaqueros would operate two at a time, throwing their lassoes simultaneously. One would dexterously noose the bear by the neck while the other would haul him back until he was exhausted and could be led to captivity, with one rider before and another behind him. A score of *fandangoes* enlivened the days of young Pattie in Monterey, but he kept up his vaccinating, after a brief rest, until he had reached San Francisco.

Hunger reduced the Pattie party to eating its own dogs and horses. One night Young Pattie's horse was chosen as the next victim, and it fell to the young man's lot to kill him. He raised his gun but could not shoot his faithful mount. Finally he offered a beaver skin to the one who would shoot the horse down.

Pattie Tricked Out of Pay

Pattie does not tell what immunity his patients were afforded, or what became of the smallpox epidemic. But when a patient had been vaccinated he advised him not to rub or touch the spot, but to return in four days if it did not take. At San Francisco Pattie came into contact with the terrible extent of the disease's ravages, as it had practically swept the whole population of California north of Monterey. He excused from vaccination all who had had the disease. Even the Russians at the settlement of Ross, north of San Francisco, he vaccinated for cash, at the rate of six cents a person.

At last came the matter of pay for his work throughout

At the old mission, San Luis Rey de Francia, near the present town of Oceanside in San Diego County, James Pattie vaccinated almost 4,000 Indians and Mexicans.

the missions. Pattie presented all his certificates to John Cabortes, head of the mission system's government, and received this curious certificate in return:

> I certify that James O. Pattie has vaccinated all the Indians and whites on this coast, and to recompense him for the same, I give the said James O. Pattie my obligation for 1,000 head of cattle, and land to pasture them; that is, 500 cows and 500 mules. This he is to receive after he becomes a Catholic, and a subject of this government. Given in the mission of San Francisco on the 8th day of July, in the year of 1829. JOHN CABORTES.

Becomes Crusader against Mexico

The part about the mules and the cows pleased the young vaccinator, but at the suggestion concerning changing his religion and becoming a subject of Mexico, he became infuriated. In wrath he shipped for the nearest port to Mexico City. He stated his wrathful indignation at the doors of the Mexican government, and was robbed of what little he had besides his certificate by *ladrones* who set upon him on the highway.

At last he reached Vera Cruz more beggared than when he started out from San Diego prison as our West Coast's first vaccinator. He shipped for New Orleans, and there he managed to borrow sufficient funds for passage up the Mississippi River to friends in the state of Ohio.

In Ohio, Pattie became a crusader against Mexico—a John the Baptist, forecrying American occupation of California on the exact terms at last arranged by John C. Fremont and his ragged mountaineers, who swept through Pattie's trail under the Bear flag and later the American flag.

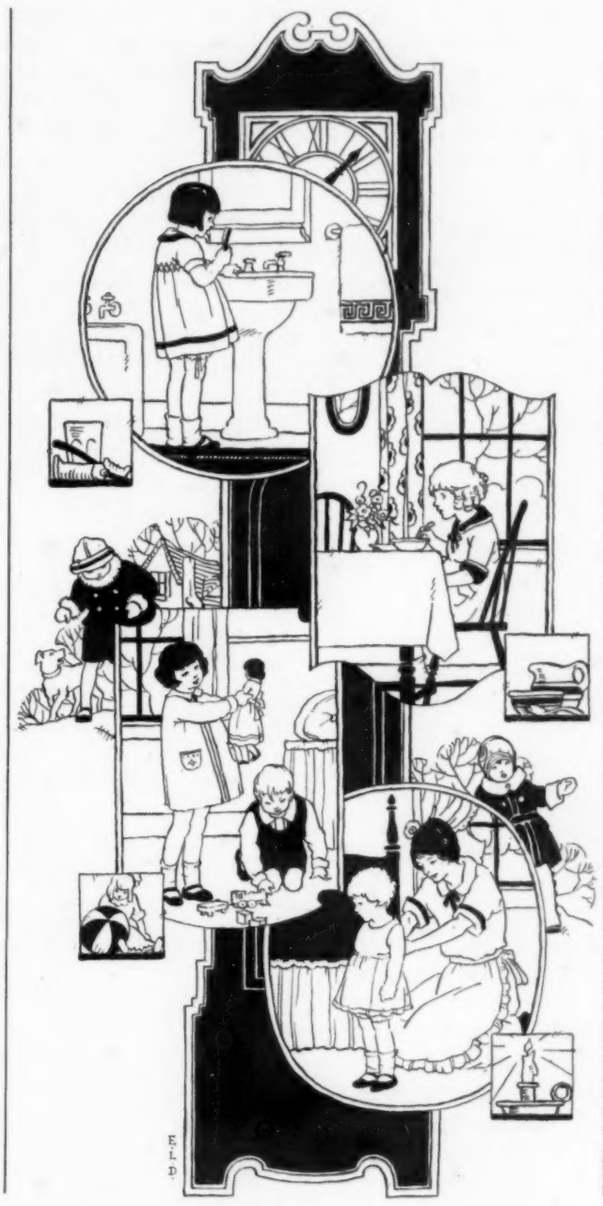
From one California mission to another Young Pattie made his way, vaccinating priests and laymen, government officials and soldiers, Mexicans and Indians. This is the Mission Pala Asistencia near San Diego, one of the missions in which Pattie was given shelter.

The Kiddie Clock

SARAH COMSTOCK

THE other day I dropped in on a certain mother whom I wish every other mother knew. The remarkably interesting thing about her is the way she combines the most advanced modern science with good old-fashioned mothering.

This remarkable person, who is a graduate nurse and who carried on public health work of wide importance until she dropped it to get married, have her own babies and carry on health work in the midst of a blissful family, somehow has the trick of keeping her youngsters well without making the process a drudgery. On the other hand, she makes them interested in health habits, as if they were good fun, a sort of jolly game in which the better fellow carries off the prize of health.



Keeping Well Game

"You're always up to some scheme," I observed as we sat down to chat in the playroom. "What's the latest game?" And she replied promptly, "The Kiddie Clock."

This is what she told me about it:

"My years of professional experience taught me to realize that the routine of bodily care must become a fixed habit, and that the time to establish that habit is the first half-dozen years of life when a child is beginning a conscious direction of his own activities. Baths, meals, work, play, outdoor exercise, rest and sleep, all should be so regular that they become automatic. I am not a crank. I can camp out for a month, turn all the daily routine topsy-turvy, and call every minute of the whole helter-skelter time a glorious lark. But all the same I believe that during the most of our time we should keep to regularity if we want to keep to health.

"My problem was to make the children feel this, to get into their minds in the pre-school age a routine which will almost attend to itself later on. Thinking it over, I hit upon the idea of the Kiddie Clock."

Child Is Clock

And then this scientific mother went on to explain that she had devised a little game in which each child is a "Kiddie Clock" and learns to become self-regulating.

These clocks, the children learn, were all well wound up when they arrived; the delicate, perfect machinery of the body was deftly made so that every part would "go" like the most carefully adjusted wheels and springs. But clocks must be kept in order; they must be wound regularly; they must be kept clean and never allowed to run down. If they are systematically cared for they will almost attend to themselves; only now and then is a little going over—some small regulation—necessary. But one must only get them to running properly and they will continue to run smoothly throughout a long lifetime. Let them be carelessly handled now, and they will never be reliable clocks. Such was her explanation to the children.

"My three are becoming such punctilious clocks that I shan't be able to keep pace with them," she chuckled. "Yesterday I heard Lucy (she is four) lecturing Bert (aged six).

" 'Bad clock!' she said. 'Getting slow! Time for ozone!'

"She had heard me urge him to fill up his lungs with ozone instead of lingering about the house with his books, as he is inclined to do. I make it a rule that they shall be outdoors by ten at the latest."

Somehow that clock game struck me as tremendously significant. It is more than a mere game; it is the very basis of the law of health. Once get regularity so established that it becomes automatic, and the normal body, in the main, will take care of itself for a lifetime without much watching. Such a habit of healthful living may ward off serious, even fatal, disease; it should give years and years of happiness and efficiency; it will, in all probability, prolong life greatly, with a vastly increased opportunity for usefulness and enjoyment. And the principle that this mother builds on, stated in her own words, is:

"We cannot begin too early to establish the habit of regularity in bodily care."

Let us look at what that routine is in the difficult pre-school period.

Needs 12 Hours Sleep Out of 24

First comes bedtime. Perhaps this may look like putting the cart before the horse, but I like to think of going to bed as the beginning of the day. It makes sleep a preparation for active affairs; the send-off for the busy, happy day to come. The hours of sleep for the youngster who is just getting acclimated to life must be long and quiet. The sleeping room should be dark enough for comfort; if there is a night light it should not shine directly on the child. If there is a glare from the early sun on the bed, dark window shades should be used or the shutters partially closed. It enslaves a family to be forbidden to talk above a whisper because "baby is sleeping," but it is important that the nursery be located in the quietest part of the house. Young nerves must be guarded as carefully as young stomachs.

It has been asserted by more than one authority that serious nervous ailments, acquired during the first year of life, are almost never totally overcome. Our pre-school child has passed that perilous first year, to be sure, but his nervous system is still very young, very susceptible. If it suffers from much disturbance, he may pay for that disturbance all his life. He should be kept free from worries and excitements and fears and undue punishments; his days should be laughing days and his nights gently restful. Noisy play should calm down at least a half hour before bedtime, and there should be quiet talk, a bedtime story perhaps, but never a nightmareish tale; no fe-fi-fo-fum giants, if you please; no hobgoblins and Forty Thieves. Blue Beard or Red Riding Hood's wolf sometimes will bother a little fellow all night if he takes them to bed with him!

Of course the mother does not rock her child to sleep, as she would love to; for the child trained to go to sleep to the rhythm of a rocking chair will lie broad awake without it.

The hours of sleep are still very long, although our runabout is taking on waking activities which increase with every year. The new baby is a simple mechanism, adjusted to do nothing more than sleep and eat and occasionally howl. By two years of age we have a far more complex little problem; a problem that toddles about busily and keeps our hands full. Sleep decreases, but twelve hours of the twenty-four remains a minimum amount of sleep required up to six years of age, and thirteen is better than twelve. The night may be ten or twelve hours long; the daytime nap one or two hours. One nap a day is enough for the healthy child over eighteen months.

Gradually the youngster may grow unwilling to sleep in the daytime; the mother cannot force the nap, but she can make it a practice to have him lie down to relax his busy little muscles and his keyed-up nerves. All the time that the mother is carefully guarding these young nerves of his, on no account should she ever mention them to him! I remember a be-curled and a be-firilled little miss of four who smugly folded her hands in her lap, smirked between two healthy apple-cheeks, and observed with immense self-satisfaction, "I'm a *very* high-strung and nervous child!"

Bedtime from six to seven o'clock then, get-up time from seven to eight, and the day is started.

Bath Can Be Great Fun

Now for the bath! The youngster must be helped through his bath as long as it is necessary, but he gradually can be accustomed to helping himself, until he becomes quite independent. Of course the youth-of-affairs is often tempted to undue haste. I recall a magazine illustration in which a small boy, approaching his astonished father, demanded in confidence: "Honest, Dad, man to man, did *you* always wash behind your ears?" As long as the daily ablution is made an ordeal, like the catechism or a liver pill, the mother will probably get such results; but is there any reason why the youngster cannot be encouraged to enjoy the daily ducking as both a game and a luxury? After all, cleanliness is the greatest luxury in the world; teach him to love it as you do!

A small tub on a low table will save the mother from bending over, but as the child leaves babyhood behind, he will like to use the big tub. A bath thermometer should be kept on hand, and the water tempered for the young child to about 85 degrees F. Lower the temperature for a rinse, and this will close the pores of the skin and ward off many a cold. Pure castile soap is always safe to use so long as the child has a healthy skin; the wash cloth for the body

should be firm enough to afford a mild friction. The sponge, with its comfortable lodging-houses for germs, is obsolete.

As he develops, the child will enjoy a cold bath in the morning. Some children even react to the severity of a cold tub; but, unless this is the case, the mother should keep to the milder form of a cold sponge. Omit the cold bath altogether, if a child shivers after it, and fails to glow. The temperature of the cold bath is about 40 to 65 degrees. A sturdy towel, which affords vigorous rubbing, helps the circulation of the growing child. Some who have the cold bath in the morning will find the warm bath twice a week often enough; it is as often as some persons can stand it without a sense of enervation. The warm bath is taken at night if it produces restful sleep.

No "Piecing" Between Meals

The regularity of meals should be established in every family, according to individual conditions. But, having once worked out a schedule to accord with the demands of business and other engagements, stick to it. Let the children realize that meals are at fixed hours and that there is no nibbling between them. It may be that the family doctor orders extra nourishment—milk and crackers perhaps—between the regular breakfast and dinner; but let this be as regular as the rest, and don't allow your children to grow up like one I know whose mouth is always crumby with ginger cookies. As soon as he learned to toddle, the child was taught the way to that dreadful cookie jar and from it sprang forth on him a host of troubles.

"Plenty of water, without and within," is the rule a doctor of children's diseases quoted to me; the latter means that the child should be trained to drink water frequently. Give him a drink even when he does not ask for it, and he will soon learn to depend on it. It is essential to elimination; it is the great cleanser. Fortunately, we have passed beyond the period when fear of drinking water reigned supreme. Water before meals, especially the first thing in the morning, is of great value. Make it a part of the child's daily routine.

Outdoor exercise should be as regular as eating, and only the most formidable weather should keep a growing child in; that is, of course, when he is in normal health. A day indoors, on the contrary, in case of a light cold may prevent a severe one.

Beware of "Bundling" Child

The healthy youngster will learn to be buffeted by winds, to play in the snow, to enjoy the very battle itself that hard weather affords, if he is warmly but not "bunchily" clad. Some children are so bundled that walking is a discomfort. Keep to simple dress suited to the season; light-weight materials that protect but do not bind are best. A safe rule for the child well beyond infancy is to let him spend as many hours of his waking time outdoors as is convenient and beneficial to him, and that should mean a great many.

Outdoor sleeping, in some cases, has been overdone, but it is often beneficial as long as the child is not subjected to excessive cold; exercise, eating, living in general are better carried out outside the house than inside, in pleasant weather.

By his fifth or sixth year the youngster can learn to swim. He can be taught dancing and various games that will bring all his muscles into play. Try to provide a room large enough for indoor romps when the weather demands it, and, in general, encourage vigorous play and a spirit of heartiness in all activities. A day's program then would be:

Around the Kiddie Clock

Evening bath, toothbrushing, and then bedtime.

Get-up time, morning bath, toothbrushing, water drinking.

Dressing. (The older he grows, the more he should help himself.)

Breakfast.

Work. Outdoor play. (Mother will make the schedule for these.) Perhaps a light lunch in the forenoon.

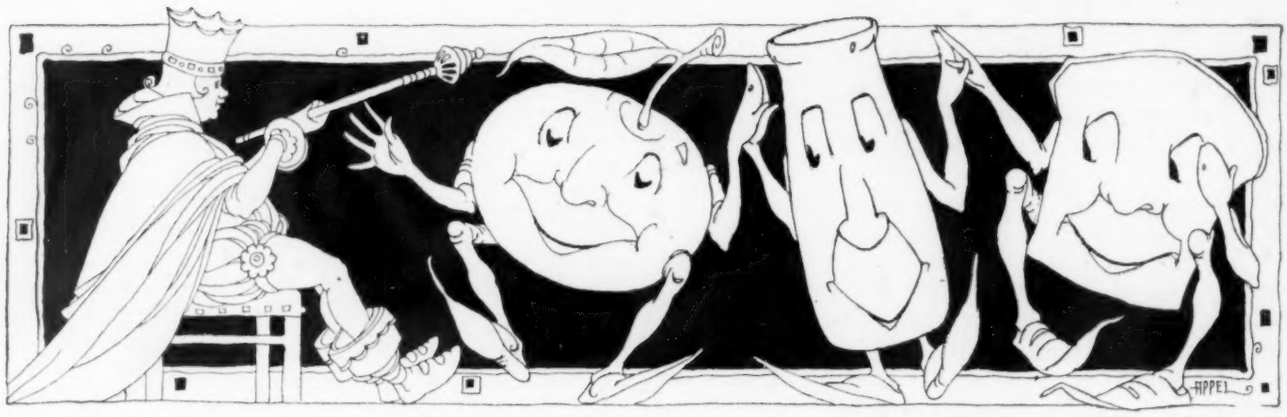
The real luncheon hour.

Nap. More work. More play.

Dinner (or supper, for the little folks).

Play. Then the half-hour before starting for bath and bed, story-time perhaps.

And here we are again around the Kiddie Clock.



From Danger Valley to Safety Hill

A Health Play for Children, in Two Parts

LYDIA J. ROBERTS

CAST OF CHARACTERS

King of Good Health

First Herald

Second Herald

The Health Guardians:
- Milk
- Vegetables
  - Spinach
  - Carrots
  - Beets
  - Peas
- Potato
- Bread
- Oatmeal
- Butter
- Fruit
  - Orange
  - Apple
  - Grapes
  - Plum
- Raisins, Figs, Dates, Prunes
- Egg
- Meat
- Water
- Sleep
- Play
- Fresh Air
- Sunshine

The Foes of Good Health:
- Coffee
- Sweet

Mary, the child in Danger Valley

Mother of Mary

Time: The Present.

Scene I. The palace of the King of Good Health in Healthland.

Scene II. Mary's home in Danger Valley.

SCENE I

TIME: Late afternoon.

PLACE: The palace of the King of Good Health in Healthland.

The King of Good Health is seated on the throne. As the curtain rises two heralds enter and bow low before the King.

King. Come, my Heralds. How have you spent the day?

First Herald. [*Takes a step nearer the King.*] Oh, King of Good Health, early this morning I went to Safety Hill.

K. How are things there?

H. Never lovlier! The grass is green, the flowers are blooming, and the air is warm and fresh. I could hardly tear myself away.

K. I don't wonder. And how are the children?

H. Plump and rosy, and as jolly and happy as you could wish.

K. And what were they doing? Something lively, I'll be bound.

H. Indeed they were! Romping, playing, chattering, like so many squirrels. Somersaults and cartwheels on the green grass, hide and seek in the woods, baseball, jumping rope, picnics, and what not!

N. But I hope they don't play as hard as that all day long!

H. No, my lord, after a hard game they sit down on the grass for a while, tell stories, or lie flat on their backs and rest. Then they are up and at it again.

K. That's just what I want them to do!

H. And you should see them eat! Such quantities of bread and butter, milk, eggs, fruit, and vegetables as they did get away with!

K. Of course they did! Children who live on Safety Hill are always hungry. Not a finicky child among them either! Once when I visited them I asked them what foods they didn't like.

"Not like!" they laughed. "Why we like everything! Just give us enough and we are happy!"

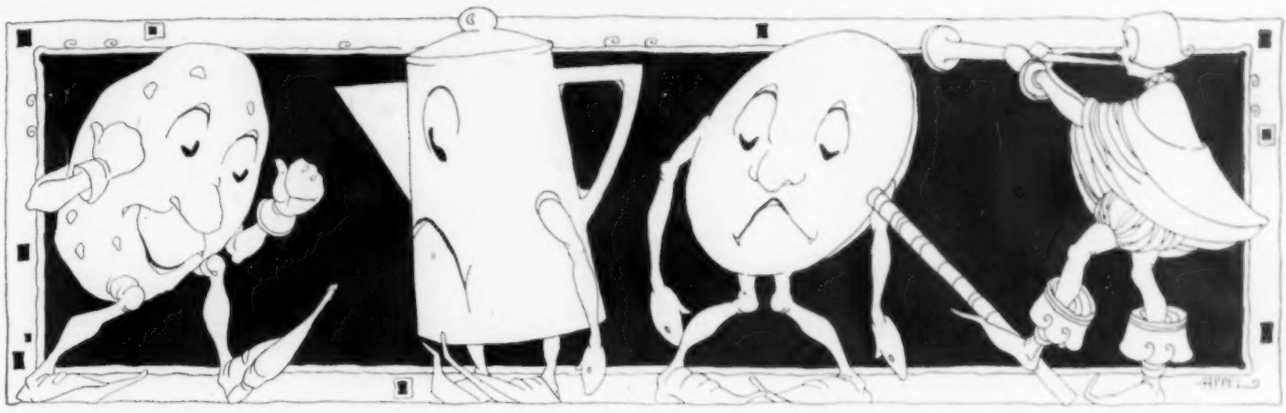
H. Exactly what they told me today. And they sleep as well as they eat. Into bed every night at the stroke of the clock—the little ones at 7 and the older ones at 8—and their heads hardly touch the pillow before they're asleep.

K. Bless them! Of course they're plump and jolly with plenty of good food and a long, restful sleep every night. It makes me happy to hear about them. Tell them so next time you see them, Herald.

H. That I will, O King! [*Bows low and steps back a few paces.*]

K. [*To Second Herald.*] Now tell us where you have been, Herald.

Second H. Not in a beautiful place like that, O King! I followed a dark path that led down,



down into Danger Valley. There it is damp, and dark, and ugly. No beautiful flowers or trees or birds. A horrible place for people. But there, Your Majesty, I found a little child!

K. [*Starting.*] No!

Sec. H. Yes, Your Majesty, a pale, thin girl, with dark rings under her eyes, and drooping shoulders, tired, fretful, and cross.

K. [*Rising.*] What, a child in Danger Valley? Have my Health Guardians failed me? [*Turns to First Herald.*] Summon them at once! Milk, Vegetables, Fruit, Cereals, Eggs, Sleep, Fresh Air, Play! I want them all! [*Herald leaves.*]

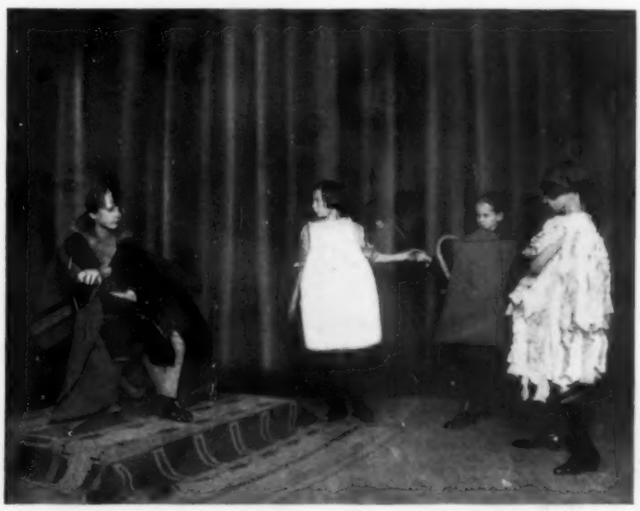
K. [*During Herald's absence King walks up and down.*] A child in Danger Valley! It cannot, must not, be. [*Herald returns, and in troop all Health Guardians in appropriate costumes.*]

K. Health Guardians! I have called you in about a serious matter. A child has been found in Danger Valley. It is your duty to keep all children on Safety Hill. What have you to say for yourselves? Speak up, Milk! I thought I could trust you, no matter who else failed me.

Milk. So you can, O King, when I have a fair chance. But this little girl just won't make friends with me. Every time I come near her she cries, "Go away! I don't want you! I don't like milk!"

K. But you know a lot of clever ways to make friends with children.

M. I've tried them all. And her mother has helped me. She has hidden me in the soup, and in puddings, and has even put a brown coat on me and called me cocoa. But you know I can't be as good a friend as if she'd let me come three times a day in a glass.



Coffee, what is this I hear of you making friends with one of my children?

K. No, I see you can't. But when children don't like you, Milk, I am sure there is some enemy working against you. Have you any idea who it is?

M. Yes, I think so. A big, black fellow called "Coffee" has been hanging around her lately. I don't see how she can like him, he's a bitter disagreeable old fellow. But he's crowding me out. [*Points toward the door.*] There he is now! Sneaking around the corner watching us! See him!

K. Coffee! Come here! [*Turns to guardians.*] Bring him in! [*Milk and First Herald drag Coffee in. Coffee holds back looking abashed.*] Coffee! What's this I hear of your making friends with one of my children? Haven't I told you to keep strictly away from them? [*Coffee hangs head guiltily.*] Why have you disobeyed me?

Coffee. [*Looking up apologetically.*] I couldn't help it, King. She *would* have me because her father and mother do. [*Slight pause. Then brightly as if remembering pleasant times spent with the child.*] And she is *so* cute, it's great fun to play with her. But I only do it just a little bit every day. Surely I can't harm her that way!

K. You surely can! You make her think she doesn't want milk; you make her nervous and cross. For the last time, now, I command you to leave her entirely alone. [*Coffee hangs his head and slinks into the background. Milk slips back to her place.*]

K. [*Turning to Vegetables.*] Now, Vegetables, what have you done to help this child?

Veg. Nothing, Your Majesty! Because I can't. She hates me worse than she does Milk.

K. You should make her like you.

Veg. How can I? When I try to make up with her she pushes me angrily away, crying, "I hate you, Vegetable, and all your family—Spinach, Onions, Carrots, Turnips—I hate every one of you! Go away!" I've tried Milk's trick of sneaking into the soup, but she always finds me and pulls me out. She won't have any of us but Potato, and she doesn't like him as well as she used to.

Potato. She and I were good pals until that fellow Sweet pushed me out.

K. Sweet! How could he?

Potato. He's such a slick fellow with his sweet ways and clever tricks. He makes her think there's no one quite so nice as he.

K. He is a jolly chap. I like to have him around once in a while myself.

Bread. But he won't come just once in a while. The time you want him is just after dinner, and not too much then.

K. You're right.

Bread. But he hangs around that child all day. He goes to school with her in the morning, plays with her at recess, and is waiting for her when school is out at night. She won't look at Milk, or Vegetable, or me.

Oatmeal. Nor me either! She used to like me, but now she won't touch me; not even when I take one of my jolly brown friends, Raisins or Dates or Figs, along with me.

King. This is serious! [*Turns to Butter.*] Does she like you, Butter?

Butter. You know I never make friends with children all alone. I stick close to Bread, Potato, Vegetable [*Nods in their direction*]. Children always like those plain fellows better when I'm along. But this child has gone back on them, so I can't be much of a friend either. [*Turns to Fruit.*] But she still likes you, doesn't she, Fruit?

Fruit. Oh, I see her oftener than the rest of you do, but even my nose is out of joint since Sweet began coming around. If he were made to keep his place I believe we could still get that child out of the Valley. Though it's a hard pull when a child gets so far down as she is.

Milk. I'm sure we could do it. But Sleep would have to help. He hasn't done much lately.

King. What's this I hear, Sleep? Have you deserted a child and let her slip into Danger Valley?

Sleep. No, indeed, I didn't desert her. I go to see her every day but she won't let me stay as long as I ought. She and I were the best of friends when she was little. I always went to see her at 7:00 at night and stayed till 7:00 in the morning. We had such good times together, and she was so plump and rosy and happy.

King. It is your duty to keep her so.

Sleep. How can I? I go to her every night at 8:00, just as I do to the children on the Hill, but she won't have me.

King. But I can't understand.

Sleep. Play is partly to blame. He's such a jolly fellow she's never ready to let him go. So she keeps him till 9:00 or 10:00 o'clock and only lets me come when she's so dead tired she can't fight me off any longer.

King. Play, are you getting out of your place? You are one of our strongest Health Guardians, but you belong only to the day. When you stay too late with a child you are her enemy, not her friend.

Play. I know it, King. I try to leave at 8:00 and let Sleep come, but she grabs me and holds me so tight I can't get away.

King. I see! [*Muses a few minutes, then speaks slowly and deliberately.*] It seems that you Health Guardians have done the best you can. *Even you* can't keep a child on Safety Hill unless she will let you. [*Sinks discouragedly into a chair.*] What is to be done?

Sec. H. [*Taking a step toward the King.*] She seemed like a sensible little girl when she wasn't too tired and cross. Don't you suppose you could talk to her, King, and persuade her to let the Guardians help her up on the Hill? I don't believe she even knows there *is* a Safety Hill, though she lived there a short time when she was a baby.

King. [*Starting up.*] Perhaps I could. I'll go to her at once and see what can be done. Come with me, all of you, and bring along Sweet and all the rest of your family. We'll show her who her real friends are, and if she is a sensible child as you think, Herald, we may save her yet!

All. We'll come! [*King leads the way, followed by Heralds and the whole troupe.*]

[*Curtain*]

SCENE II

Time: The next morning at 8:30.

Place: The dining room of Mary's home in Danger Valley.

[*Mary sits at the breakfast table, listless and yawning. The clock shows the hour. On the table before Mary is an orange, a dish of oatmeal, a sugar bowl, a small pitcher of cream, and a glass of milk. But Mary is not eating. Her mother enters from the kitchen at the left and places a plate of toast on the table. She notices the breakfast is not eaten and begins urging Mary to eat.*]

Mother. [*Persuasively.*] Come, Mary, eat your breakfast, dear. That's a good girl!

Mary. [*Peevishly.*] I don't want any breakfast!

Mother. [*Cheeringly.*] But you must eat something. It's a long time before dinner.

Come, Mary, eat your breakfast, dear. That's a good girl!

See this nice oatmeal I cooked for you! We'll pour some good cream over it and sprinkle it with sugar, so! Doesn't that look good?

Mary. No! I hate oatmeal! Take it away! I won't eat it! [*Pushes oatmeal angrily away. Mother puts the oatmeal away sadly.*]

Mother. Oh, I'm so sorry. [*Then brightly.*] Well then, drink your milk and eat this nice piece of toast. See how crisp and brown it is!

Mary. I don't want milk! I want coffee! [*A knock is heard at the door.*]

Mother. [*Turns toward the door and stands for a moment.*] Who can be calling so early in the morning? [*Hastens to open the door. Starts back in surprise.*] A King! [*Bows low.*]

King. [*Entering.*] I am the King of Good Health. [*Mary rises, looking in surprise at the King.*] My messengers brought me word that this little girl was living down here in Danger Valley and I have come myself to help to get her out.

Mary. [*Taking a step toward the King.*] In Danger Valley! What do you mean? Am I in Danger Valley?

King. You surely are. Come, let me show you. [*Takes her hand and leads her to the window. She looks a time in silence, shudders, then turns away.*]

Mary. [*As she turns from the window.*] It's a horrid place! It never seemed so ugly before.

King. It's no place for a child. Come with me to Safety Hill.

Mary. Safety Hill! Where is that? What is it like?

King. [*Handing her a glass.*] Take this magic glass and see for yourself. Look way up there [*Pointing*] and tell me what you see.

Mary. [*Takes the glass and looks eagerly through it for several minutes.*] Oh, oh, such a beautiful, beautiful place! Mother, you ought to see! Just like a picture book!

Mother. What do you see, Mary?

Mary. A wonderful big hill, covered with the greenest grass, and beautiful trees, and flower beds full of flowers—all so bright and warm and sunny! [*Pause.*] And the children! They have the reddest cheeks and the plumpest bodies! And such fun as they're having! Oh, how I'd like to be there with them! [*She turns longingly from the window toward the King.*]

King. That's just where I want to take you, Mary. Will you come?

Mary. I'd like to come, but it's a long way and such a big hill! I could never climb it, I'm sure. I'm too tired. [*Sinks listlessly into a chair.*]

King. But I've brought some good friends to help you. They'll take you to Safety Hill if you'll just let them.

Mary. [*Sitting up, interested.*] Of course I'll let them. Who are they?

King. I'll call them. [*He goes to the door and calls.*] Health Guardians! [*They enter.*]

Mary. [*Rising, in surprise.*] Why, I know them! Are they the Health Guardians?

King. They are indeed. [*Turns to Guardians.*] Mary has decided she would like to climb to Safety Hill. I have told her that you can help her if she will let you. Tell her in turn what you each can do. You first, Milk.

Milk. [*Coming forward briskly and making a stiff little bow.*]

If you'll take me for your friend
All my powers to you I'll lend,
I will build good bone and muscle,
Up that hill [*Pointing*] I'll help you hustle.
[*Holds up one-half pint measuring glass of milk.*]
Take this full three times a day.
Be my friend! [*Coaxingly.*] Come, what do you say?

Who can be calling so early in the morning? A King!

Mary. [*Taking the glass.*] Of course I'll take you for my friend if you'll help me climb Safety Hill. I'll begin right now. [*Sips milk gingerly as if afraid she won't like it. Then looks up surprised.*] Why, I do like you, Milk! [*Drinks it all.*] I won't mind a bit doing that three times a day. [*Milk nods approvingly and slips back to her place.*]

King. Good! Now Vegetables. [*Vegetables and all her family—Spinach, Onions, and as many as desired come forward, stand in a row, make a deep bow.*]

Vegetables. [*Stepping back of her family and pointing to them in turn.*]

Spinach, Carrots, Beets, and Peas,
Few better friends have you than these.
[*All vegetables join her in saying:*]
Iron for good red blood we bring,
For folks like you that's just the thing.
[*Taking a step in her direction.*]
When we come near you, don't look so sad.
[*Pleadingly.*] Try to like us, we're not so bad.

Mary. You're very pretty. I don't know why I haven't liked you. Let me taste you now!

[*One after another they slip daintily up to Mary who pretends to nibble at them in turn, occasionally making a wry face.*] It will take a little while to get used to your different tastes. [*With determination.*] But I'll try you every day until I do. [*The vegetables nod and smile.*]

King. That's the spirit! [*Waves his wand at Fruit, who comes forward with her family.*]

Mary. [*To Fruit.*] Are you a health friend too, Fruit? I thought you were just a pleasant play fellow.

Fruit. [*Fruit with her family—Orange, Apple, Grapes, etc.—recite together.*]

We are pleasant, 'tis true,
But we're more than that, too.
We help you, as well as make fun.
With those fellows there
[*Pointing to Vegetables, etc.*]
And *our* help, I declare
You'll be climbing that hill on the run.

Are you a health friend too, Fruit? I thought you just a pleasant playfellow.

Take a glassful three times a day

Mary. That's easy! I don't even need to *learn* to like you.

Fruit. But you need to remember to choose me. You've neglected me lately for Sweet.

Mary. [*Remembering.*] So I have. Well, isn't Sweet a helper too?

Fruit. Ask him. [*Mary turns inquiringly toward Sweet.*]

Sweet. [*Hanging head.*]

I confess with much shame
I am largely to blame
For bringing you down in this vale.
I pushed with rude grace
Better friends from their place
[*Pointing toward Milk, Fruit, and the rest.*]
And here you are, thin, tired, and pale.

Mary. [*Surprised and grieved.*] Why Sweet! And I thought you were so nice. [*Turns to King.*] Must I leave Sweet behind if I want to climb to Safety Hill?

King. The less you see of him the better till you are safely on top of the Hill. Then you may have him once in a while. But you must surely make him keep his place. [*He motions to Raisins, Dates, and Figs, who come forward and bow.*]

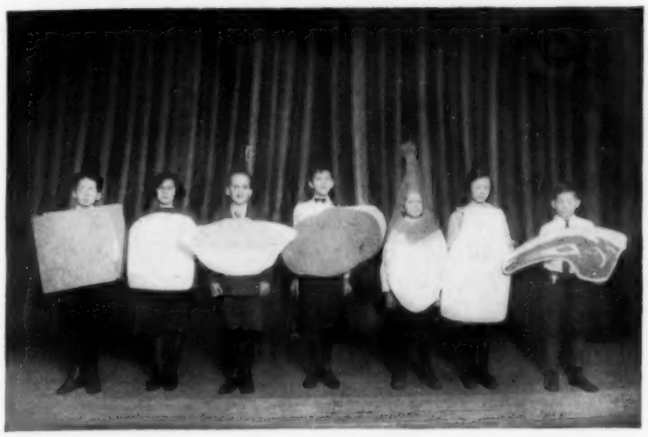
Raisins, Dates, Figs, Prunes. [*Enticingly.*]

If you must have something sweet,
Try us, you'll find we're quite a treat,
Take us in your oatmeal, or at close of your dinner,
But leave alone Candy [*Pointing toward him*],
He's a terrible sinner.

Mary. I'll remember that. I think I like you as well as Candy anyhow. [*Potatoes, Cereals, Butter, Bread come forward together and make a deep bow.*] What can you do for me?

Bread, Potatoes, Cereals, Butter. [*Together.*]

Strength to run, and jump, and play,
We can give you day by day.



It seems that you Health Guardians have done the best you can. Even you can't keep a child on Safety Hill unless she will let you.

[*Egg and Meat march quickly down without waiting to be signalled.*]

Mary. [*To Egg.*] And you?

Egg:

The children on the Hill
Have me almost every day,
I help to build their blood and nerves,
And muscles, too, they say. [*He retires.*]

Mary. [*To Meat.*] And what about you, Meat?

Meat. You really need these other folks [*Pointing to Milk, Egg, Vegetables.*]

Far more than you do me.
But I taste very good
So have me if you like,
At least occasionally.

[*He slips back to place. Mary notices Coffee.*]

Mary. And Coffee? [*Coffee hangs his head.*]

King. Speak up, Coffee. Tell her the truth about yourself.

Coffee. [*Comes slowly to the front, hanging his head. He bows, then looks up and says slowly and deliberately.*]

I make you fidgety and cross,
Your nerves on edge I keep.
I chase away your good friend Milk
And rob you of your sleep.
I do you not *one speck* of good,
But harm you, I must own.
So you'd better say goodbye to me,
At least until you're grown.

Mary. [*Regretfully.*] I'm sorry. I had begun to like you, Coffee.

Coffee. You won't miss me with all these better friends. [*He returns to his own place.*]

Water. [*Stepping out briskly.*]

I think that every mother's son and every father's daughter
Should drink at least till twenty-one
Just milk and good cold water.
And after that they might drink tea,
But nothing any stronger.
If all folks would agree with me
They'd live a good deal longer.

[This verse is not original but has been long used by children. Its source is not known, hence credit cannot be given to author.]

King. Right you are, Water!

[*Play, Sleep, Fresh Air, Sunshine, come forward together. Mary runs and catches Play by the hand.*]

Mary. I know you are my friend, Play, without you even telling me so.

Play. I am, indeed, your friend, if you make me keep my place.

I rightly belong to the day,
And there you should see that I stay,
For these partners of mine
[*Points to them as she names them.*]
Sleep, Fresh Air, and Sunshine,
Are quite as important as Play.

[*Play takes Fresh Air and Sunshine each by a hand. They recite together.*]

Play, Sleep, Fresh Air, and Sunshine.
Come out of doors and stay with us
The livelong day.

Sunshine.
But when it's night, and I must leave,

Play. Then send me too, away.

Sleep.
Then if you'll let me come at eight
And stay the whole night long,
I'll rest your nerves,
And help you grow
Up big, and tall, and strong!

The villains of the play

Now, Vegetables, what have you done to help this child?

Fresh Air.

[*Fresh Air slips over and stands by Sleep.*]

But leave your window open wide
To make a place for me,
For I'm your friend both day and night,
Both Sleep and Play'll agree.

[*Sleep and Play nod their heads in agreement.*]

Sleep, Play, Fresh Air, and Sunshine.

We're partners in this game of health,
Thus we divide the time.

Play, Fresh Air, Sunshine. [*Group themselves together.*]

We work by day, [*Fresh Air slips over by Sleep.*]

Fresh Air and Sleep. And we by night,

All. To help you make the climb.

Mary. [*Looking slowly and thoughtfully over the whole group.*] Well, well! I never knew you were all my friends. [*Turns to mother.*] Did you, Mother?

Mother. Yes, Mary, I knew they would be good friends to you if you would let them.

Mary. How stupid and silly I was not to see it! To stay down here in this ugly valley when I might have been on that lovely hill! [*To King, anxiously.*] Are you sure it isn't too late? Can the Guardians really take me there?

King. They surely can if you will do your part. But you must be the best of friends with every one of them, for it will take them all to get you up on the Hill and keep you there. And you must be strong enough to send your enemies away.

Mary. Oh, I will!

Sweet. [*To Coffee.*] This is no place for us! [*Steps toward Mary.*] Well, I'd better be going. I'll drop in once in a while when you're up on the Hill.

King. Be sure it is only once in a while.

Coffee. [*Also takes a few steps toward Mary. Waves his hand goodby.*] So long, Mary! I'll see you when you're twenty-one, if you haven't forgotten me by then. [*Mary watches them go, then turns relieved toward the King.*]

Mary. Well they're gone! And I'll gladly go with the Health Guardians to Safety Hill. When can we start?

King. Right away! Suppose we begin with this breakfast, which should have been eaten long ago. There are five of your friends, all ready to start you on the way. [*Points toward the table.*]

Mary. [*Walking to the table and looking at it in surprise.*] Why, so they are! [*Points at each as she names it.*] Bread! Butter! Milk! Oatmeal! Fruit! [*With determination.*] We're friends from this time forth and forever. [*Sits down and begins eating with relish.*]

[*All Health Guardians gather round and sing. To tune, "Away, away, away, away among the blossoms." Music on opposite page.*]

SONG

Hurrah! hurrah! hurrah!
[*Wave hands with each hurrah*]
She's leaving Danger Valley!
Hurrah! hurrah! hurrah!
She's bound for Safety Hill.
[*Point toward Hill.*]

Oh, tired, and thin, and cross, [*Slowly.*]
Are children in the Valley,
But happy, well, and strong [*Brightly.*]
Are children on the Hill.

She sent away her foes,
[*Point toward door where Candy and Coffee left.*]
That kept her in the Valley.
She took us for her friends, [*Point to selves.*]
We'll help her with a will.

Hurrah! hurrah! hurrah! [*Wave hands.*]
Goodby to Danger Valley!
Hurrah! hurrah! hurrah!
We're off for Safety Hill!

Hurrah! She's leaving Danger Valley.

[*Turn toward Hill. Milk and King take Mary's hand and last stanza is repeated as procession with King, Milk, and Mary leading moves off the stage.*]

[*Curtain*]

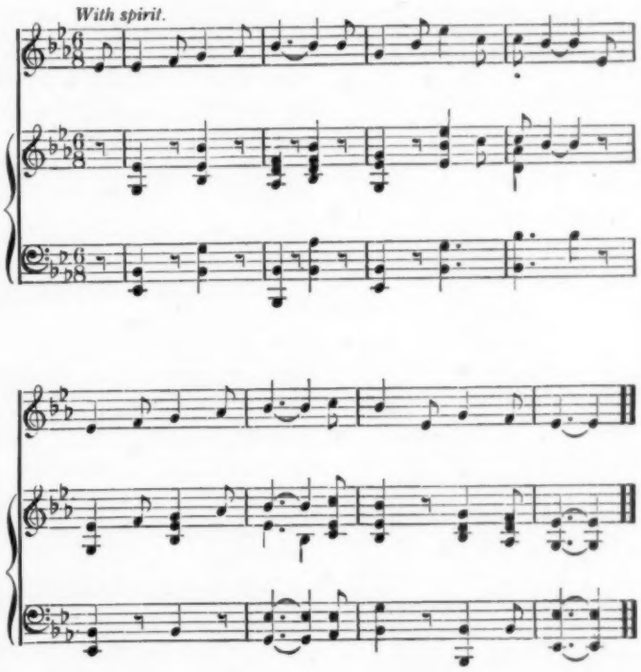
Origin of the Play

The play as herein given was a direct outgrowth of the series of health lessons taught to the children of a health class at the University of Chicago last summer. The children of the health class were, with one or two exceptions, undernourished ones who were finicky about their food and generally poor in respect to sleep and other health factors.

The aim of the class was to interest the children in their own health in a natural, wholesome way, and to teach them the simple requirements of diet and healthy living in so graphic and convincing a manner as to persuade them to live the lessons taught, and consequently to improve their nutrition.

To make the situation graphic, underweight, under-par children were pictured as living in "Danger Valley," so called because such children are truly in danger of catching infectious diseases, and of having such diseases much harder than other children, while the strong, healthy, robust children were described as living on "Safety Hill." The children of the class decided at once that they all wanted to be on Safety Hill, and the problem of how to get there at once arose. In the lessons which followed, both the how and the why were taught concerning milk, sleep, vegetables, fruit, play, exercise, and other important health factors. The children really tried to live the teaching and they made considerable progress "up the hill."

The play embodies the essence of these health lessons. It was not written by the children, as it might well have been, since the class continued for but a few weeks and was nearly over before the children had had the subject-matter on which to write it. The play was therefore written for them, but was made as nearly as possible like what they could have written had they had the opportunity. The natural and enthusiastic way in which they adopted the play and made it their own showed that it might be regarded theirs almost as truly as if it had been their own composition. It is believed that with a similar background of health lessons other children will find it equally easy to fit into the play and make it their own.

LEAVING DANGER VALLEY

Value of Health Plays in General

A health play of the right kind, properly and effectively used, can render important service in health education. To meet these requirements the play should first of all be scientifically sound in respect to the facts which it presents. It should, in addition, be simple and straightforward in its presentation, rather than fanciful, and the language should be suited to the intelligence and understanding of children. A play written by the children themselves is most apt to fulfil these requirements and is therefore of the best kind.

The benefits to be derived from the play are several. If the facts have first been presented in lessons, the working over of the material to write the play requires that the children recall, reorganize, and restate the information previously learned in order to make the dialogue and "business" of the play. Their "review" thus becomes the "new view," the kind most approved by educators; and it furnishes in addition a valuable training in language expression. The writing, the reading, and the practicing of the play thus reinforce and vivify the lessons taught, so that they can never be forgotten.

Warning against Misuse of Health Plays

Not the least of the benefits derived from the play come from its being taken home where it is read to the parents and other children in the family, and often to neighbor children as well. Whoever happens to be around is called on to read the various parts, and thus the lessons are impressed on a much larger group than was originally intended. The presentation of the finished play to an audience of parents or children from other grades further enlarges its field of influence.

A word of caution should be offered against the possibility of letting the play work harm

to the child to the extent of more than overbalancing the good it might do. It is easy for both teachers and children to become so interested and enthusiastic over a play that they practice too long and at such high tension that the children become tense, overexcitable, and fatigued. Needless to say, by such procedure the play becomes a detriment rather than a benefit to the health. Moreover, a health play given at night is a violation of one of the most fundamental laws of child health and should never be tolerated. Unless it can be used in such a way and at such times as to contribute to, not detract from, the health aim, it might better not be used at all.

How to Introduce and Use the Play

The logical time to introduce the play, whether composed by the children or given to them ready made, is, as has already been indicated, after a series of lessons in which the facts with which the play deals have been effectively taught. It can then be used as is any dramatic reader, and will be welcomed because of the familiar material in a new form. The children should be allowed to read it again and again, with different children taking the various parts. If one child fails to get the point of a phrase or paragraph, or to express its correct meaning with his voice, other children will be ready to show how they think it should be read; and this they should be allowed to do. As a rule, children will read and re-read a dramatic story until they nearly know it "by heart."

If it is decided to stage the play and invite another room or the parents to see it, or to give it in assembly for the entire school, little additional work is needed. The parts can be assigned to be learned, the children deciding to a great extent who shall take the various ones.

Some rôle—that of the King in this play—is always the most coveted one. All children desiring this part may be given a chance to try it out, and the children allowed to decide whose rendering best suits them. Their choice is usually the right one, as even the competitors for the honor will recognize and gracefully withdraw to accept some other rôle. It must be remembered, too, that to the children any part is an important one, and the children who learn less easily may therefore be given some of the shorter ones.

It is often wise to have two sets of characters, especially for the most desired parts—as King, Mary, Milk, and Mother in this play—and to allow each cast to give the play before different audiences, if it is to be given more than once.

The play as it stands has enough characters to use all the children in an ordinary grade room and is especially adapted to use in a rural school, since it uses children of varying sizes and ages. It calls for thirty-two children as here written, but more vegetables and fruits may be added and even other parts if desired. The play lends itself to attractive costuming, the costumes of the vegetables and fruits, of sunshine and candy in particular, giving abundant opportunity to indulge in the use of color, which children love. The children enjoy planning the costumes and will gladly make them, if allowed, during their handwork period or at odd moments. Obviously the more the children do of the planning, the work, and of carrying the responsibility, the more valuable and successful the play becomes from the educational point of view.

Suggestions for Costumes

Children's own ideas about how the different characters should be represented are often better than those suggested by adults. A few points concerning costumes used in this play are offered as suggestions only.

The sandwich board is the easiest and most effective costume for many of the parts, and it is one which the children can make for themselves and which they enjoy wearing. As given here, a big cardboard milk bottle sandwich board reaching from chin to knees represented Milk, while Coffee wore a large brown coffee pot.

Similarly, Orange, Apple, Grapes, Plum, Potato, Butter, Bread, Egg, and Meat wore large cardboard models of the foods they represented, and Sweet a cardboard cylinder striped red and white to represent a stick of candy. For Oatmeal, a cardboard bowl was used, with a representation of the cooked food showing above the rim. Sleep was draped from head to foot in a long black robe and carried a bag of sand.

Most of the remainder had costumes made of colored crepe papers—Sunshine, a golden yellow dress with a crown to represent the sun's rays; Play, a romper suit of blue and carrying a gay colored ball; Water, a dress made of alternate strips of light blue and green paper to suggest the shades in waves of water; and Fresh Air, strips of neutral gray floating over a foundation of green (to represent grass).

Vegetables herself wore a long green dress trimmed with string beans and with a shower bouquet made of lettuce and radishes, with Brussels sprouts for the "shower," while her family, Beets, Carrots, Peas, and Spinach, had dresses typifying these vegetables. Fruit also wore a dress of green with a necklace of prunes and apricots, and had oranges, apples, and bananas suspended from her belt.

The King and the Heralds wore the conventional costumes for these parts, Mary a simple play dress of her own, and the Mother a long skirt and apron with her hair done high in accord with her own ideas of how a mother should look.

Cigaret Smoking—How It Affects the Boy

M. V. O'SHEA

HOW does smoking cigarets affect a boy from the age of 14 to 18 years? If he persists in smoking, what form of tobacco is least injurious? Is there a remedy for smoking? These inquiries were made by a Mr. S. P. McD., and they are typical of the questions frequently asked by parents and teachers of boys in the teens who have formed the habit of smoking.

It would require many volumes to present the opinions that have been expressed by men and women at home and abroad regarding the effect of tobacco on the growing boy; but when it comes to *exact information* regarding the matter, the case is very different.

Opinion Largely Based on Prejudice

During the past few years, the writer has canvassed a large mass of opinion concerning the relation of tobacco to the physical, intellectual and moral development of the young, and he has found that at least 95 per cent. of those who have written on the subject have maintained that a boy of any age is injured physically, mentally and morally by the use of tobacco, especially in the form of cigarets. But a careful analysis of this mass of opinion shows that it is based largely on prejudice, though most of the writers state that they have made observations in daily life which have convinced them that when a young person smokes his physical growth is interfered with and his mental and moral development is arrested.

Weighing this opinion from a scientific standpoint, one concludes that there is probably some basis for the almost universal belief that tobacco is harmful during the growing period of life, even though it may be comparatively harmless to a mature person.

Included in the great body of opinion against tobacco which the writer has been able to examine are views of physicians, teachers, jurists, probation officers, manufacturers, social workers, reformers, and, in fact, representatives of all the activities in which people engage.

One would think that the views of physicians would be founded on clinical or experimental data, but, as a rule, they have no such foundation. Some views expressed by physicians were based on the observation of a number of cases of physical impairment in the teens, apparently due to the use of tobacco; but physicians, speaking generally, have based their opinions on general impressions as laymen have done.

Juvenile court judges have stated that most of the boys who have come before them for discipline have been addicted to the use of tobacco; but one such judge, a very prominent one, who a few years ago indicted the cigaret very severely, has written recently that the cigaret is not responsible for many of the defects and delinquencies in the young which have been ascribed to it.

In the course of this investigation, the writer found that most industrial establishments employing large numbers of boys refuse to engage any who use tobacco. The managers of personnel in these industrial establishments have confessed that they have no definite scientific evidence that boys who use tobacco are inferior to those who do not. But still they are convinced that abstainers do better work than those who indulge in tobacco.

A large number of the most distinguished men in America were asked to give their experience regarding the effect of tobacco on their own physical and intellectual efficiency. Sixty per cent. of those who testified use tobacco, though all of them declared that they use it "moderately." Most of them took pains to state that they did not begin the use of tobacco until they were fully matured.

Leaders Warn Against Habit

A few of them, however, began when they were ten or eleven years of age and indulged in the habit continuously. Many of these distinguished men, though not asked for their views on the effect of tobacco on youth, went to the pains to state that they would advise all young people to leave tobacco alone, even though they found that it did not interfere in any way with their efficiency. On the other hand, some of them declared that smoking was of real value to them.

Attempt has been made to secure reliable data regarding the effect of tobacco on the young. A large number of principals of schools and teachers were asked to make a careful study of the effect of tobacco on the scholarship and behavior of their pupils. These principals and teachers were cautioned to exclude all prejudice and preconception from their investigations. They made observations for a long period, comparing the mental work and conduct of smokers with that of non-smokers in their schools. A large body of accurate data was secured in this way.

Practically every principal and teacher believes that the use of tobacco is a detriment to the intellectual work and conduct of pupils. This does not mean that every pupil who uses

tobacco is inferior, either in mental work or in behavior, to pupils who are abstainers, but it does mean that, taking the pupils in a school as a whole, those who use tobacco are inferior to those who do not. One is compelled to conclude that in respect to mental work and self-government, the use of tobacco by persons in the teens is injurious.

Teachers Think Work Poorer

These principals and teachers were asked to give a report on individual pupils showing what change, if any, was noted in their work or their behavior after they began the use of tobacco. A large volume of such reports has been secured. A few of these typical testimonies are given here; all but about 3 per cent. of the testimonies were of the same general character as the first four cases cited below:

> *A* is a boy of considerable athletic ability and of more than average mental ability. His work in the elementary school was good. He entered high school as a non-smoker. The first year his average record was about 90. The second year he dropped a little, but was still doing good work. The third year a marked decline took place, for he closed the year with an average of slightly less than 85. The fourth year he made a failure and averaged less than 80. He was known definitely to have been smoking the latter half of his third year. In his fourth year he used tobacco excessively. He came from a good home, good church surroundings, and was well thought of in the community.
>
> *B* comes from best kind of home. The father and mother are both far above the average in general intelligence. A sister is a trained nurse of exceptional ability. The first year in high school he did good work. He began smoking about the end of the first year. Since then he has deteriorated and is doing work which will not average above 75.
>
> *C* comes from a family of athletic fellows—several boys. An older brother was an exceptionally strong student in high school and was graduated with honors. *C's* record in graded school was excellent. He was considered to be a non-smoker during the first two years in high school, with an average standing of 90 the first year and 87 the second. The third year he began smoking and dropped below 85. This year he is doing even poorer than that. He is not a fiend, but has used cigarets moderately for the last two years.
>
> *D* is a boy studied and observed for several years. He began smoking while in the seventh grade. This boy was graduated as "honor" student, took up the study of medicine in Northwestern University Medical College, graduated with high standing, and is at this time a member of the faculty of his alma mater. Suspect he is still a smoker.

Extensive experiments conducted for the writer in a pyschological laboratory in measuring the effect of tobacco on the mental processes of adults, led to the conclusion that tobacco, as a drug, tends to slow down mental activity in the majority, but not in all, cases. It has not been actually demonstrated by psychological experiment that mental activity in the case of immature persons would be more or would be less resistant to the effect of tobacco than in the case of mature persons.

Inhaling Smoke Is Injurious

Mr. S. P. McD. asks whether the use of tobacco is more harmful in one form than in another, and if it is injurious to the growing boy what remedy can be applied. There has never been any exact data secured regarding the effect, physically, mentally or morally, of smoking tobacco in a pipe as compared to smoking it in a cigar or cigaret.

Testimony has been secured from physicians to the effect that the cigaret is the least injurious form in which tobacco can be smoked. But there is a peculiar factor involved in the use of the cigaret which makes it dangerous, when used freely by young persons. It has been shown that inhalation is much more frequent with a cigaret than with a pipe or cigar. In the course of this investigation, principals and teachers were asked to observe whether boys who smoked pipes or cigars ever inhaled, and there was not a single instance in which this was observed, but there were a great many instances in which the inhalation of cigaret smoke was observed. There is general agreement among physicians and also among principals and teachers to the effect that inhalation is physically, intellectually, and morally injurious to persons in the teens.

Two Remedies for Habit

If a parent, guardian or teacher is convinced that a boy is being injured by the use of tobacco, is there a remedy?

Of course, the answer that first occurs to the writer is that young persons do not spontaneously indulge in tobacco, because the organism revolts against it, until immunity has been acquired. The use of tobacco in the early years is due in ninety-nine cases out of one hundred to imitation.

If the members of a group, whether boys or girls, did not use tobacco, no one boy or girl in the group would have any temptation to use it. The proper course, then, for anyone who thinks it desirable to protect a boy or girl in the teens from smoking is to see that the habit does not become general in the group of which the boy or girl is a member.

If a boy has acquired the habit, there seems to be some evidence that he can be cured by the use of a drug which will develop revulsion against the taste of tobacco. Testimonies have been obtained from a number of physicians saying they had observed successful drug treatment for the cigaret habit, but this treatment has not yet become very general. No harm can result from it. It would be worth trying in the case of a fourteen-year-old boy who has become addicted to the use of tobacco and who craves it.

The Great Red Plague

LOYD THOMPSON

"NEXT." The tired-looking dispensary physician turned to the next patient, who was a girl-mother, not yet out of her teens. She held rather awkwardly in her arms a small baby, which she was trying to quiet.

"Which is the patient, you or the baby?" the doctor asked, not unkindly, as he arranged the papers on the table beside him.

"It's baby, Doctor," the young mother replied, slipping the dress from the little one, "she's all broke out."

The doctor needed only a hurried inspection of the puny, little body, which was covered with dark, red spots, to tell him the nature of the trouble.

"How old is the baby?" he asked.

"Four weeks tomorrow."

"And how long has she had this eruption?"

"It began a week ago, but has got worse in the last two days."

"How about you," the doctor asked, a little sharply this time, "have you had anything wrong with you? Any breaking out?"

"No, Doctor."

"Any sore throat?"

"No, Doctor."

"How long have you been married?"

"I was married ten months ago, but—but—I—I'm—my husband's not here now."

"Where is he?"

"I—I don't know, Doctor. But—but tell me, what has baby got?"

"She has a serious disease. You will have to be examined, too, and have your blood tested."

Baby Has Congenital Syphilis

The young mother learned from the soft-voiced, motherly social service worker in the next room that her baby was the victim of congenital or hereditary syphilis, that she, herself, undoubtedly had become infected from the husband who had deserted her, and that both must undergo long and careful treatment.

Of this terrible scourge the girl had no knowledge, or at least had heard only vague, unreliable statements. She had been told that there was a blood disease, known as syphilis, which often attacks women of the underworld and is transmitted by them to others, but that it could come to her or her baby she never dreamed. But now the motherly nurse explained to her that while this is a disease of the underworld, and while it is contracted through immoral acts, it also claims its tens of thousands of innocent victims. She told her that the sufferer from syphilis may deposit the germs on a common drinking cup to infect the next one using it; that the common face towel has been the source of many infections; that kissing, even the kiss of youthful games, has transferred the disease many times.

Often Transmitted through Kissing

And here the girl-mother was told of a most distressing epidemic of syphilis transmitted through kissing which occurred in one of our large cities a few years ago. It seems that a number of young people gathered one night at the home of one of the party and as the evening wore on someone suggested a kissing game. Little did these innocent young girls realize that one of the young men of the party was suffering from this dread disease. Seven of their number and one other young man developed the disease on the lips, and through the ignorance or viciousness of one wayward youth eight young lives were doomed to long distress, if not to early death.

And then the pitiful facts of hereditary transmission of syphilis were explained to the mother: How she must have contracted the disease from her worthless husband, even though she never knew it, and in turn she gave it to her unborn babe. She was told that a very large per cent. of babies which are born dead are the victims of congenital syphilis, and that this dread disease is responsible for a great deal of feeble-mindedness and idiocy in the land.

Long Treatment Necessary

But the picture which the nurse painted was not altogether hopeless. For she explained to the girl that if she would do just as she was told and keep coming to the dispensary for months, even after all symptoms had disappeared, both she and the baby could probably be cured, or at least that the disease could be held in check.

The case of the young mother and her baby is not at all unique. Almost every day in the large dispensaries of the country similar cases are observed. Of course the vast majority of the victims of syphilis are not innocent of wrong, but they pay a terrible penalty for their weakness. At best it means many months of hard and disagreeable treatment, and at worst there is almost no limit to the suffering it may entail.

At first a purely local condition, starting with a sore of variable size at any point to which

the germs gain access, these germs multiply and soon spread through the blood and lymph to all organs and tissues of the body. A few weeks after infection a rash usually develops which may resemble many other skin diseases and is often the first symptom to send the patient to the physician.

A Young Man's Story

Not long ago a young man of twenty came into a doctor's office with his body covered by a bright red rash. At first he absolutely denied the possibility of a syphilitic infection but later on he broke down and cried, confessing that he had been taken by a much older man to the home of some women whose reputations in the community were of the wrong type.

After a night of drinking and carousing he crept home much ashamed of himself and vowed in great fear that he would never be guilty again. He had been told of the dangers, but when a week or ten days elapsed and nothing happened his mind became more at ease. However, nearly four weeks after the eventful night a slight sore developed. In greater fear than ever he went to his older friend, who laughed at him and burned the sore with caustic. Again the mind of the youth became at ease, for the sore healed in a day or two, leaving scarcely any evidence of its existence.

Six weeks later the rash appeared and he now had sense enough to apply to a physician. He was told that he had syphilis and that had he gone to a physician when he first noticed the sore his chances of cure would have been immeasurably better. It was explained to him that at that time the germs could have been found swarming in the sore and a diagnosis made at once; that a diagnosis made during that stage of the disease followed by the proper treatment almost assures the individual of a speedy cure, while the longer treatment is postponed the more difficult a cure becomes.

But what of the origin of this disease? From where did it come? How did it begin? How long has it been known?

Dispute about Origin of Syphilis

The first knowledge of syphilis is somewhat shrouded in mystery, and for over four centuries medical men have debated concerning its origin. Did this now world-wide disease have its beginning in the dim recesses of antiquity to be transmitted in an uninterrupted stream to modern times, or was it born over night, as it were, at the close of the fifteenth century? Was syphilis known to the ancients, or did Columbus' men contract it from the natives of the new land and introduce it into Europe on their return?

Those who claim for syphilis an ancient origin quote from the Bible and other early writings to substantiate their claim. The story of the death of King David's first son by Bath-Sheba after seven days of life, and David's subsequent lamentations concerning his ailments, especially the condition of his bones, are cited to prove that the author of the Psalms contracted syphilis from the wife of Uriah, and, while quite suggestive, are not conclusive. Still others have gone so far as to assert that certain prehistoric bones found in Japan and other regions show evidence of this disease.

The claim to the American origin of syphilis is based largely on the rapid spread of the disease over Europe soon after the return of Columbus. At this time it assumed a most virulent epidemic form, decimated whole communities, maimed tens of thousands for life, and caused untold sorrow and suffering.

Now Know Cause of Disease

In the early days of the knowledge of syphilis many strange ideas of its cause were entertained. It was thought to be due to the winds and the rains, to the stars, to the wrath of God, to poisonous water, to the eating of human flesh. However, after a time the light began to dawn, the idea of a living poison or virus as the cause of the disease grew in the minds of medical men, and with the advent of bacteriology, the science of germs, many attempted to find the microbe which produces it. From time to time numerous workers thought this had been discovered, but on closer investigation the germs which they described were found to be present in other diseases, or even in healthy people, or they were proved not to be germs at all. It was left for Schaudinn, a German scientist, first to describe the microbe of syphilis.

On the third day of March, 1905, this worker while searching in the fluid from a skin eruption of a woman suffering from the disease saw some minute, spiral, cork-screw shaped bodies move slowly across the field of his microscope. They were very, very small, averaging about two five-thousandth of an inch in length, and only one fifty-thousandth of an inch in diameter. After finding these same organisms in several similar cases and failing to find them in other diseases, Schaudinn reported his discovery to the medical world.

At first learned scientists looked with doubt on the findings of this great worker; it could not be that the long-sought goal had been attained! But soon doubters began to believe, until today the *Spirochaeta pallida* is recognized by the whole scientific world as the cause of the great red plague.

World-wide in Extent

The extent of syphilis is almost beyond belief and one of its most striking features is its world-wide distribution. There is scarcely a spot on the globe where human beings reside which has not harbored this disease. It is found in the

gold camps of the Yukon, and among the ivory hunters of the Congo, on the vast steppes of Siberia, and the plains of Argentine. It is, however, especially a disease of dense population, whether temporary or permanent. In the great cities of the world, London, Paris, New York, its victims are numbered by the thousands, and such multitudes as gather together for great fairs and expositions, as Chicago, St. Louis and San Francisco leave syphilis in their wake.

It has been affirmed that Iceland is peculiarly free from this disease. If such is the case, it would seem that this is due, not to geographical situation, but to the simple lives and morality of the inhabitants. It is, however, a matter of common observation among physicians in certain rural districts that this disease is rarely encountered.

Many estimates of the actual prevalence of syphilis have been made. Fournier, the great French physician, thought that 15 per cent. of the adult population of Paris, and Erb believed that 12 per cent. of the adults of Berlin were infected.

The medical department of the United States Army published figures collected before this country entered into the World War which indicate that 20 per cent. of the young men of the country of the general class from which recruits to the army come are syphilitic, while 5 per cent. of the young men of the class of college students are infected.

Paul Ehrlich, the physician who discovered "606," the drug that has proved one of the most useful remedies in the treatment of syphilis.

Millions Suffer from Disease

One of America's most eminent pathologists from postmortem examinations of a large number of cases estimates the incidence of syphilis in America at the startling figure of 30 per cent.

The truth probably lies somewhere between these figures, but undoubtedly there are between five and ten millions of people in the United States suffering from this disease.

Of course it must not be thought that every one of this vast army of sufferers has a breaking out of the skin. Far from it. A large percentage are totally ignorant of the nature of their disease, or even that they are diseased at all. Furthermore, unless the physician be constantly on the alert he may often be led to draw wrong conclusions by symptoms which are found in many other diseases. The great Osler once said to his students, "Know syphilis in all its manifestations and relations and all other things clinical will be added unto you." By this he simply meant that syphilis may attack any organ or portion of the body and may resemble nearly any known disease.

A patient may present himself to the physician complaining of vague symptoms, a slight headache, a shortness of breath, a tremor of the hands, failing eyesight, or what not, with no thought of an infection long since forgotten, or remembered only as the light punishment of the folly of youth. Or the patient may be the innocent victim of an infection in the early course of which the disease had been so slight as to pass unnoticed. The symptoms which are present might be due to a dozen causes, but one by one the skilled physician will weed them out, a blood test will be made, and the individual will be confronted with the fact that he is suffering from syphilis of some of the internal organs.

A young woman who had been told by her home physician that she was suffering from tuberculosis of the lungs applied to her doctor for advice about going to another climate. It seemed that she had had a cough for a year or more, ran a slight afternoon temperature and had lost considerable weight. A careful examination revealed the fact that, in addition to the signs of disease of the lungs, the central nervous

system (the brain and spinal cord) showed evidence of abnormality. This was suspicious, and as all patients regardless of the condition for which they consult the physician should be subjected to a blood test for syphilis, it was done in this case. The test showed that the young woman was suffering from syphilis, and when the germs of tuberculosis could not be found in the sputum it was decided that the lung disease was probably syphilis and not tuberculosis.

The patient denied any knowledge of infection, but as she had been married some years previously to a young man who had died suddenly of "heart disease," treatment for syphilis was strongly urged. The rapid improvement of the lung disease as well as the patient's general condition left little room for doubt as to the correctness of the diagnosis.

Mother Can Transmit Disease

Syphilitic disease of the brain and spinal cord are among the most serious conditions in the whole field of medicine. Softening of the brain, general paralysis and locomotor ataxia are now known to be due solely to the invasion of the brain or spinal cord by the germs of syphilis.

In the inherited or congenital form of the disease, which is now recognized by most authorities as occurring only when the mother has it, although the father may, and usually does, have it also, we find much the same picture as in the acquired form. The child may be born with active manifestations present, but more frequently is born apparently healthy, and in a few days, or a few weeks, or even as long as a few months it develops symptoms of the disease. Or the child may appear healthy at birth and remain apparently so for years, even, as in one case recorded as many as thirty-eight, when it begins to show the unmistakable signs.

There is an old adage which says that syphilis never kills. This statement is utterly false. In that portion of the United States which is known as the registration area, that is, where the causes of death are required by law to be recorded, and which comprises a little over two-thirds of the entire country, there were more than 13,500 deaths due to syphilis in all its phases reported for the year 1916. Undoubtedly many more deaths due to this disease occurred where physicians reported other causes out of deference to the relatives of the patients. And furthermore, out of the more than 100,000 deaths reported as due to diseases of the heart, certainly a large percentage of the heart disease was caused by syphilis. Typhoid fever claimed less than 10,000 victims during the same year, while smallpox, once the scourge of the race, killed but 114 persons.

Laboratory Tests in Diagnosis

It will be seen from what has been said that the recognition, or diagnosis, of syphilis at any stage is of the utmost importance. When the original abrasion is present the *Spirochaeta pallida* can, as a rule, be found in the secretion or blood serum from it by examination with the microscope. This requires special training and considerable skill, as there are certain similar germs, which for the most part are entirely harmless, but which may be present and be mistaken for the germs of syphilis.

Later in the disease the Wassermann test becomes of the utmost value, as it is found "positive" in practically all untreated cases. The Wassermann test is what is known as a biological reaction, and is quite a complicated procedure. It is so much so in fact that in the hands of one not skilled in its performance it becomes worse than useless. But in the hands of a trained worker it is one of the most valuable tests in the whole field of medicine.

Can Syphilis Be Cured?

Usually the first question asked the physician by a person who has been told that he has syphilis is, "Can I be cured?" In the majority of cases this can be answered in the affirmative, although the answer must be qualified by the statement that a cure probably will result only when treatment is carried out absolutely to the letter. Furthermore, the statement should be qualified by the stage of the disease when treatment is started.

If this is begun soon after infection and is carried out systematically and thoroughly, a cure should result in practically all cases. If, on the other hand, the patient is seen when there is marked involvement of the internal organs the outlook is very grave, although even such cases do get well. Syphilis of the brain and spinal cord, also, is most serious, yet with the modern methods of treating these conditions many cases recover.

How It Is Treated

Mercury, or quicksilver, in some form or other has been used in the treatment of syphilis at least since the first of the sixteenth century, and according to a noted French writer, by the Chinese 2,000 years before the Christian era. This metal, used in the treatment of syphilis, is what is known as a specific, that is, it acts as a poison directly on the germs of the disease, and is one of the few specifics known to medicine.

The day is passed, however, when it is considered sufficient for the physician to hand a patient a box containing a few pills which he is to take at certain times, and to tell him to report perhaps once a week or twice a month.

There are also many other factors to be considered than the giving of medicine. The daily life of the patient must be regulated carefully; residence in a hospital is most desirable during the active course of treatment and almost essential in some cases, such as those in which

the internal organs or brain are involved. The diet should be plain but nourishing; the use of alcohol should be totally done away with, while the use of tobacco should be reduced to a minimum, especially when the mouth is affected. There should be plenty of exercise in the fresh air, and a change of climate and scenery is most beneficial.

The drug treatment consists today, as it has for so long, of the administration of mercury, as well as the use of the preparation known as arsphenamin, or salvarsan, as it was formerly called. But the modern physician rarely prescribes mercury by mouth. It usually is given hypodermically or injected directly into the veins.

The wonderful drug, arsphenamin, or "606," is a preparation of arsenic, and was the result of the six hundred and sixth experiment (hence the name) of the great physician, Paul Ehrlich. And, while the dream of this genius that a drug could be produced which at one dose would rid the body of the deadly spirochetes, has not been realized, arsphenamin has proved to be one of the most useful remedies of all time. So effective, in fact, is this drug that some physicians have discarded mercury altogether and have pinned their faith to the newer preparation. This, however, undoubtedly is a mistake, and even the eminent discoverer of arsphenamin stated that mercury should be used with it.

How to Avoid Syphilis

The ideal toward which the medical profession is striving is the complete abolition of disease from the face of the earth and with syphilis this would be comparatively easy if it were not for the fact that its propagation is so intimately connected with one of the elemental passions of man. However, the prevention and eradication of this scourge of humanity constitutes one of the most important problems before the world today. It not only is a problem for the physician, but its solution must rest with the sociologist, the reformer, the clergyman, the educator and the lawmaker.

Medical men have long hoped that a method of preparing a serum or vaccine would be devised which could be used as a preventive for syphilis that would be as effective as the antitoxin of diphtheria and the virus of smallpox, but up to the present time no such method has been produced, although it seems to be well within the range of possibility.

The acquiring of syphilis on the lips and tongue, can be prevented by avoiding promiscuous kissing, the use of eating utensils, drinking cups and pipes after others. Physicians and nurses can almost absolutely remove the danger of infection of the fingers by the use of rubber gloves.

The prevention of syphilis acquired through immoral acts could be accomplished by abolishing immorality. But this, in our present state of social development, is impossible; it must come as a gradual evolution. Education will help. All the youth of the land should be taught the dangers and consequences of this dread disease and a great stride will have been made.

This brings up the problem of the best method of imparting such knowledge to young people. Should they be taught these truths in the home, in the school, by the church, or by the family physician? If the parents can and will do it, the home certainly is the proper place. With the vast majority of parents this is no easy matter even if they do recognize the need. They must be taught the importance of such knowledge to the child, as well as how best to impart it.

Education alone will not solve the problem of the eradication of syphilis.

The segregation and quarantine of all infected persons as long as they are capable of infecting others would of course stamp out the disease, but this, too, is impossible.

Some Methods of Abolishing It

The disease might be abolished in a comparatively short time by making it reportable, that is, by compelling physicians to record with the health authorities of each city or county all cases coming to them for treatment. Steps also should be taken to detect the disease when it exists in the so-called latent form by making Wassermann tests on all persons when possible. For example, the blood of all immigrants should be tested, and, if found positive, the individual should be denied admission to the country. The inmates of all prisons and institutions for the insane should be similarly examined. All applicants for civil service positions should be forced to have Wassermann tests. From this it would not be a far cry to persuade employers in all lines to compel their employees to be similarly tested. In order to prevent the congenital form of the disease, marriage licenses should not be issued until both applicants have had negative Wassermann tests.

By these procedures it would not be long until the health authorities would have a fairly comprehensive knowledge of the prevalence of syphilis in a given community. With this accomplished all infected persons should be forced to be treated, by private physicians if they prefer, or at public expense, and a severe penalty should be imposed on those failing to report for treatment.

The time is ripe for the eradication of this disease of the ages. The cause is known. The methods of prevention are easy. The cure has been discovered. It only remains for this knowledge to be applied, and the great red plague will be a thing of the past.

Plain Facts About Health and Disease

HEALTH NEWS OF THE MONTH

The Medical License Scandal

One of the most prominent features of the medical news during the present month has been the space devoted by newspapers to the investigation of medical licensure in eastern states, particularly in Connecticut. The Connecticut investigation followed the recent exposé by the *St. Louis Star* of the ease with which a diploma was purchased in Missouri. This exposé directed the limelight on the serious conditions existing in other states, particularly Connecticut and Arkansas, which have been made the dumping ground of graduates of low-grade medical schools. For more than five years, *The Journal of the American Medical Association* has again and again warned these two states that their eclectic boards constituted a potential menace to their citizens. Moreover, provision for reciprocity between these and other states made these boards a menace to other states.

Now that the scandal has burst on the community, public interest has been aroused, and public officials are at last taking action. The situation carries a lesson to every other state—a lesson that the Council on Medical Education and Hospitals and *The Journal of the American Medical Association* have been reiterating steadfastly and earnestly for more than twenty years. The only assurance for the people of any state that their physicians will be competent is a single educational standard of the fundamental sciences for those who purpose to treat the sick, and a single, nonpolitical examining board in each state to make sure that such persons meet the standard.

An interesting sidelight on the attitude of the public toward scientific medicine is seen in the apparent unanimity with which reputable newspapers recognized the high standards and ideals of the American medical profession. As one paper, the Marietta, (O.) *Times*, said:

> In a profession given to quackery, quacks would attract little attention. The counterfeiting of medical diplomas is in itself a tribute to the medical profession. Counterfeiting implies that the established currency is sound. So it is with this great profession. All the more reason, therefore, why the profession itself should make every effort to eliminate the quacks, and why the public should help by informing itself of every doctor's medical pedigree and ostracizing the occasional pretender or crook.

Locating Internal Organs

The average man has little idea of just where in his interior such organs as the stomach, liver and intestines may be situated. Indeed, physicians themselves, although quite definite regarding the location of these organs as observed in bodies after death and as determined by methods of scientific observation, such as are applied in the diagnosis of disease, had not available any series of studies on a large number of normal, healthy persons.

Such a study has now been provided by Doctors R. O. Moody, R. S. Van Nys and W. E. Chamberlain on 600 healthy students in the University of California. In these studies, the x-ray and other accurate methods of observations were used. The California investigators claim that the normal position of the stomach is lower than has been generally believed to be the case. They found that in 80 per cent. of healthy persons the stomach is long and reaches from one to three inches below a line which might be drawn around the body over the tops of the bones of the hip. When the stomach lies in this position, which is apparently low, the patient seldom or never suffers from any stomach or intestinal disturbance. In the same way, the investigators determined the position of the liver and of the intestines, and as a result are convinced that it is impossible to change the positions of these organs by any system of diet, rest or exercise. So long as the nerves of the stomach and intestines keep them properly active, and so long as these organs are freely movable in the abdominal cavity, the patient seldom has noticeable symptoms.

Typhoid Fever Epidemics

During the past few months, New York City and Chicago were visited by typhoid in an unusual manner. In the former city, ten members of the staff of a large hospital were afflicted with this disease. An investigation showed that one of the persons responsible for preparing the food was a carrier of typhoid organisms. Not one patient in the institution, however, became infected. The cases were definitely traceable to a single source.

At the same time, the city of Chicago became subject to an actual epidemic of typhoid affect-

ing more than 100 persons. When the conditions were analyzed, it became apparent that the disease was definitely traceable in one section of the community to faults in the provision of water. Through faulty pumping arrangements, sewage was permitted to contaminate the drinking water, and this, too, in such large amounts as to make even a high degree of chlorination ineffectual. Had chlorination not been practiced, it is impossible to estimate what a tremendous number of cases might have occurred.

Indeed, the dose of filth must have been great in order to have caused the development of as many as actually did occur. Steps were taken immediately to cause all householders in the district affected to boil water used for drinking purposes and for the washing of dishes. Chlorination was increased to the utmost practical extent, and steps were immediately taken to discontinue the pumping of contaminated material into the water supply.

Furthermore, all persons in the affected district were urged to undergo vaccination against typhoid, and many availed themselves of this safe method. It may be said that such prompt action resulted in an immediate decrease in the number of new cases, and that the epidemic was checked.

M. F.

GETTING THE BABY TO SLEEP

PROPER habits of sleep are almost as essential to the good health of an infant as is the right diet or sufficient exercise in the open air. Unless a baby gets plenty of sleep, he is certain to be nervous, irritable, and to grow more or less debilitated. During the first year, as a general rule, the more babies sleep the better. During the second year fourteen hours is the ideal amount and, in order to get this in, a twelve-hour night must be supplemented by a nap of two hours during the daytime.

To encourage sleep the infant should be placed alone regularly at the same hour each afternoon and evening in a quiet, partially darkened room or in a protected situation in the open air. Regularity is of the utmost importance. A baby put to bed late one evening cannot be expected to go to sleep promptly the next. Nor should a baby be rocked, fussed over, or otherwise pampered at his bedtime hour. Such a practice, if indulged in, is certain to become habitual and to react to the detriment of the infant.

Not only is it important for a baby to sleep a sufficient number of hours out of the twenty-four, but he should sleep soundly while he is at it. To insure this he should be protected, so far as possible, from loud sounds, strong light and tactile sensations of every sort. Young mothers are liable to make the mistake of disturbing their babies by unnecessary attentions. The less done to a baby while he is asleep the better. Very often babies are kept awake by the mistaken ministrations of solicitous mothers, who fail to appreciate the fact that their babies' whimpering is in reality an appeal for sleep. A point, too, well worth emphasizing in this respect is that water given just before bedtime results in bed-wetting and consequently an unnecessary disturbance.

Altogether, a maxim well worth bearing in mind at bed time is: "Let well enough alone."

E. L. P.

THE NATIONAL MANIA

ONE advertisement of bran claims that the preparation, served on cereal, is "Good as a Daily Dozen." A man from Mars, or even perhaps from Europe, might wonder why being as "good as a Daily Dozen" is recommendation for bran, and, if it is only as good as the Daily Dozen, and not better, why the prospective consumer might not choose the Daily Dozen.

But for Americans the advertisement need be no less subtle. When the stream of business men driving to their offices are confronted by such billboard advertising, they know that it refers to the national malady, constipation. And they know that the Daily Dozen (the setting-up exercises which they use as remedy) take all of ten, fifteen or twenty minutes, minutes which may make them late to the office. They know too that it is more work to exercise than to eat bran. Thus the American love of ease and of the labor-saving device assures that between bran and calisthenics, the prospective consumer is likely to choose bran.

The advertisement is a clever exploitation of our national mania for short-cuts—anything that is a little easier, that will save three minutes. Apparently we have an inherent inability to learn how seldom we get more than we pay for.

It is not the purpose of this editorial to denounce bran. The man who eats it is just that much to the good, but he could well afford to indulge in the Daily Dozen as well. Bran will, in many cases, relieve constipation, but it does not build up muscle and send the blood racing. Only exercise will do that.

The situation is made even more humorous because the Daily Dozen is in turn a short-cut, an effort to condense into twenty minutes an

amount of exercise which on the ball ground, golf links, hockey field, tennis court, bridle path, swimming pool or skating rink, might take two hours, allowing for time spent in changing costumes and in transportation.

But something may be missing even though every muscle of the body is given fastidious grooming. Enjoyment of the outdoors and the colorful costumes of players, the exhilaration of competitive sports, the pride in skill, the spirit of play and the sense of change from an indoor environment, all play their part in keeping a person fit. Take these away and you are running the business of your health on too narrow a margin. Soon interest flags, enjoyment pales.

The sportsman has been reduced to a bran-eater. M. S.

SPINAL PRESSURE ON NERVES

THE proponents of certain peculiar systems of treating disease place great emphasis on the belief that various diseases are produced by interference with blood supply, or with the function of nerves, through pressure on them by misplaced spinal bones.

Numerous investigations made on the skeleton and on the human body after death have indicated that such a condition appears impossible. The investigation of this matter in the living is difficult, because the bones in the vicinity of the spinal nerves and blood vessels are complex, overlapping one another, and the canals through which the nerves and blood vessels emerge vary in direction at various levels of the spinal column.

Recently, several French investigators have devised a new method of studying the problem, which seems likely to settle definitely the question as to whether or not pressure of the type mentioned may occur in any considerable number of cases. A needle is inserted into the space between the spinal cord and the surrounding walls of the tube in which it lies, and a solution of iodin in vegetable oil is injected into the space. This solution produces no reaction, and is entirely harmless. Furthermore, it is opaque, so that its distribution after injection may be photographed with the x-ray.

Many normal persons, as well as those suffering with various diseases, were studied by this method; and it was found that in the case of many hunchbacks suffering from tuberculosis of the spine and in several cases of tumors of the spinal cord, the fluid was unable to pass because of obstruction. However, in cases of chronic rheumatic pains and in other diseases, the injected fluid spread freely.

The French observers, Sicard and Forestier, point out that partial displacements of the bones making up the spine result in an actual widening of the canals through which the nerves emerge. Only when one of the bones is completely dislocated does compression of the contents of the canal follow. In such cases, however, the result is invariably a complete obliteration of the opening, and destruction of its contents. Furthermore, it is known that pressure on a nerve or any other structure within the canal will give rise to certain symptoms, including pain at the point of pressure, rigidity of the spinal muscles, and neuralgic pains spreading into the organs which these nerves supply, and possibly paralysis of motion or loss of sensation.

The French investigators have evolved a method which permits study of many obscure conditions related to the spine. Moreover, they have shown by easily visible, black and white pictures that such compressions of nerves and dislocations of spinal bones, as certain cultists claim to be the cause of various diseases, simply do not exist. M. F.

BE VACCINATED AGAINST SMALLPOX NOW

SMALLPOX is one of the most loathsome of diseases and before the discovery of vaccination was one of the most deadly.

It causes 500,000 deaths a year in India where vaccination is not generally practiced. Careful estimates show that 100,000 cases of smallpox occur annually in the United States. The mortality is not so high as in India because many cases occur among those who are partially protected by an old vaccination. But the disease rises at times to a high degree of virulence. In 1885 an outbreak in Montreal which had long neglected vaccination caused the death of 3,164 persons.

Just now smallpox is increasing in frequency and in virulence in the United States. In 1921 Denver, Colorado, had 924 cases with 37 deaths; in 1922 there were 247 deaths in 802 cases, a mortality eight times as great.

The number of cases of smallpox appearing in any community and the deaths resulting therefrom are always in inverse ratio to the thoroughness with which vaccination is carried out.

In New York, where the sentiment against vaccination is not very strong, the smallpox ratio is only .05 per 1,000 of the population. In Minnesota, where the anti-vaccination sentiment is stronger, the ratio is 2.46 per 1,000 popu-

lation, nearly fifty times as great as in New York.

Vaccination is not dangerous. When bovine virus is used, which has been tested by government experts, and the vaccination is done carefully and cleanly, the risk of harmful effects is negligible. It is more dangerous to cross a crowded city street in these days of automobiles than it is to be vaccinated.

Have yourself revaccinated if you have not had a successful vaccination within five to seven years. By all means be vaccinated *now* if you have never been protected in this way. And, above all, have your children vaccinated. You have no moral right to deprive your children of the certain and safe protection which vaccination provides against this loathsome and deadly disease. J. M. D.

THE HAZARDS OF THE GOLF PROFESSIONAL

THE word hazard has a specific meaning when associated with golf. It refers to those excrescences and depressions on the course which are apt to obstruct themselves into the line of travel of the rolling ball. In its more specific meaning, the term hazard may refer to accidents, such as the unexpected blow from a wildly swung club, the contact between a traveling ball and an unsuspecting cranium, and the long winded alibi at the nineteenth hole.

Now, Dr. C. M. Davis of Cleveland has had another hazard which affected the golf professional at a local course. The professional, who was a Scotchman—there *are* professionals who are not Scotch—had been associated professionally with a golf course since the age of twelve. At that time, he was assigned one day to painting golf balls from which the enamel had disappeared. He noticed after the first day's work excruciating headache, nausea, vomiting and cramps. He recovered within a few days; but whenever he attempted to paint golf balls, he suffered from the same kind of symptoms.

He is now forty-three years old; and during the past five years, has done more painting of golf balls than formerly. During the latter part of 1922, circumstances were such that he was occupied for almost an entire month with such work. He then began to have pains in his limbs and back, and finally such weakness in his legs as to make it difficult for him to walk. Various methods of treatment were tried, but without relief. It was then suspected that his condition was associated with the absorption of lead from the paint used in his work.

He was advised to discontinue painting, with the result that the pains gradually disappeared, his muscles slowly improved, and eventually he was able to resume teaching as a professional.

Lead is one of the poisons associated with industries that is most likely to affect the unwary, and to be overlooked as a cause of symptoms by the unsuspecting physician. It forms an ingredient of many paints, tools and other commercial materials. M. F.

WINTER'S TREASURE CHEST

LIFE'S most valuable things lie buried near at hand—so near that they are often overlooked.

A Persian Prince, selling his castle, roamed the world in search of the Acre of Diamonds, only to find it in the garden he had sold.

Two little children hunted the world over for the Bluebird of Happiness, only to find it in their own backyard.

Ponce de Leon finally found the Fountain of Youth in his own heart.

Winter, that treasure chest of fun and frolic, health and happiness, is regarded by most people as a period in which to hibernate.

Think over the attractions that Winter offers! Skating, snowshoeing, tobogganing, skiing, curling, golf on snow-clad links, iceboating and hiking. Outdoor exercise in Winter gives a healthful glow, puts the purest kind of fresh air into your lungs and makes roses bloom on your cheeks. If you neglect to claim its benefits, you are the loser.

January is our "fightenest" month. Start the year right. Get warmly dressed and out of doors this winter. J. P.

ELECTRIC SHOCK

FROM time to time reports appear in the newspapers concerning the deaths of workers from electric shock, either from contact with high power wires or through accidental transmission of current from ordinary wiring.

For instance, several reports have described cases of persons who have died in the bath while using household massage or vibration devices. Again, others have been shocked while working with x-ray machines. Still other instances have been associated with electric irons, cookers, heating pads, washing machines or similar household devices.

When the total number of such devices now used is considered, the accidents, of course, are relatively few. It is not our purpose, therefore, to warn anyone from the use of such devices; indeed their use should be encouraged, for they

are convenient and time-saving. Nevertheless, accidents do occur, and persons should be prepared to administer proper first aid measures.

One of the first effects of electric shock is to produce unconsciousness, following which there is asphyxia as a result of oxygen lack in the brain. The effects vary between momentary stopping of breathing and a degree of damage from which recovery is impossible. Another effect is fibrillation—rapid vibration or twitching—of the heart muscle. When this condition involves the muscles of the ventricles of the heart, its pumping function is lost; the muscle does not contract in the usual manner, and develops, instead, a disordered twitching. The tissues of the body are, of course, deprived of fresh blood. It, therefore, follows that resuscitation from electric shock involves a correction of these conditions.

The first measure to be applied, as advised by Dr. Cecil K. Drinker in the *Journal of Industrial Hygiene*, is artificial respiration. If the action of the heart has not been disturbed, persistent artificial respiration will often bring about recovery. Sometimes the pressure on the chest used in artificial respiration may have a direct effect on the heart and stop the twitching already mentioned. In experimental animals, it is possible to open the chest and to apply massage successfully directly to the heart. It is doubtful that such a procedure would often be warranted in the human even if medical attention were immediately available. The first aid measure to be used by laymen, therefore, is artificial respiration. This was described in the November, 1923, number of HYGEIA in the article on poisoning by carbon monoxide gas.

Dr. Drinker is careful to warn against two methods of treatment which are frequently tried without success; the first of these consists of injections of various drugs directly into the heart. He says that such injections give no promise of influencing the result. Furthermore, some have contended that the shocked person is more apt to recover if he is subjected to another jolt or a countershock. This idea is evidently the result of the observation that men who are seriously shocked while at the top of a telegraph pole and then fall are more apt to revive than those who are shocked while on the ground. On the basis of this idea it has been recommended that persons who have been shocked should be lifted and allowed to drop, pounded on the feet, punched, or otherwise stimulated. Dr. Drinker's experience indicates that there is no known scientific justification for such procedures.

M. F.

THE RELATION OF VOLUNTEER TO OFFICIAL HEALTH AGENCIES

The executive office of the National Tuberculosis Association believes that the official health agencies should be responsible for the maintenance of all public health activities which naturally include tuberculosis. The demand for such public health and tuberculosis activities on the part of the people is frequently brought about by the voluntary tuberculosis association, and this association should welcome the opportunity of transferring voluntary activities to the official agency even though this should necessitate a rearrangement or modification of the program of the voluntary agency.

Objections have been raised and no doubt will be raised in the future by voluntary associations as to the advisability of transferring activities maintained by them to the official agencies. These objections will include the following: that the personnel will not receive adequate salaries; that the personnel may be changed and that new personnel will be appointed solely for political reasons; that the work cannot be so well done by politicians as it can be by private boards and other reasons of a personal nature.

It should be fully understood by voluntary health workers that public health activities are an official function, and that even though these activities be not as well performed by the official agency as by the private, such a transfer of activities should be welcomed by the voluntary agencies.

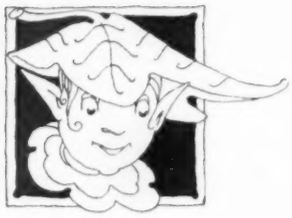
THIS statement, from a report of Dr. Linsey R. Williams, president of the National Tuberculosis Association, is an admirable presentation of the proper function and scope of volunteer health agencies. It is frequently helpful and necessary for a volunteer organization to initiate a movement in preventive medicine in certain districts or communities in order to arouse the people of those districts to the importance and to the possibilities of disease prevention, such as the control of malaria, of hook-worm disease, of yellow fever, or of tuberculosis.

Financial aid to secure the service of trained experts is essential at first, but such aid should be gradually lessened in amount and entirely withdrawn as soon as the demonstration is complete. It is as pernicious, and in the end as fruitless, for an outside agency to bear permanently the financial burden of such a campaign, as it is for charity to support an able-bodied person. A community can be pauperized quite as readily as an individual and with as bad, or worse, results.

If the inhabitants of a disease-infected district cannot be aroused by a convincing demonstration to the need and value of the suppression of malaria or of any other preventable disease, they do not deserve continued financial aid for this purpose. Moreover such people are certain not to give to a movement of this sort the cordial, sustained cooperation which is indispensible to success.

J. M. D.

"I've had a glorious day today"
said Jimmy Germ with glee
"I've made a little baby sick
And that's great sport for me"
"A mother left the baby's milk
Uncovered on the sill
So I climbed up and dived right in
And swam around until
I'd multiplied some thousand times
Then I stuck around to see
The outcome of my handiwork
And who my victim'd be.
At noon the mother got the milk
The baby drank its fill
And when I left this evening
The babe was good and ill."



Twin Maples

MARGARET E. GREENWOOD
AND
ELEANOR M. FONDA

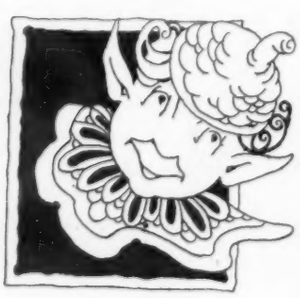
IN a corner of a field on Mr. Green's farm, there stood a tall, straight oak tree, and on either side of it tiny twin maples. The three trees were great friends, and the beautiful stately Oak watched over the baby Maples, and told them what they must do in order to grow tall and straight and strong, and be useful as well as beautiful.

"You must send your roots deep down into the earth," he said, "and take all the nourishing food and water that you can; but, above all, you must stand very straight and firm when the North Wind blows, and not bow and bend before him." And each little Maple said: "I will try."

But, oh dear! The North Wind was very strong and the little Maples were weak, and it was very much easier to bend and bow before the wind than to stand straight and firm when he blew so hard!

"Be careful," warned the Oak. "Stand straight, little trees; your tiny trunks are growing larger and harder every day, and if you bow before the wind, they will grow crooked and you will not be able to straighten them."

For a time each little Maple said bravely, "I will try." But after a while the great Oak felt sad, for when he said, "Stand straight and firm, little friends!" he often heard an impatient and peevish little voice answer, "Oh dear, I can't stand straight all the time. It is too much trouble. The North Wind is so strong I *must* bend and bow before him. When summer time comes and the soft breezes blow, it will not be hard and then I will straighten my back. And besides, what difference does it make?"



The wise Oak sighed and sighed for his little friend. He spread out his arms and tried to protect the Maple, but the North Wind swept through them.

Time passed, and one day Farmer Green, showing a visitor over his farm, paused beside the three trees in the field.

"What a beautiful oak tree," said the visitor admiringly.

"Yes," answered the farmer, and as useful as it is beautiful. The children love to play under its shade; they use the acorns for cups and saucers, and they try to reach around its big trunk. They call it 'their' tree. The animals, too, love it; they seek its shade when the sun grows hot—and its shelter when the rain falls; and people for miles around know it, it is so straight and strong. A beautiful tree is a joy to every one."

Then his face changed as he pointed to the Twin Maples.

"See those maples?" he asked.

"When I planted them, they seemed equally strong and sturdy, but look at the difference now. That straight little fellow will some day be as strong and as beautiful as the old Oak, but the wind must have been too much for the other one; see how the trunk is twisted and bent and gnarled. It can never be straight

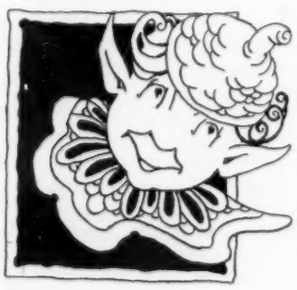
now, for its trunk is too hard. We will have to cut it down for firewood."

"It is a pity," the visitor agreed. "Do you know of what those trees remind me? Twin boys who live near me. One is the straightest little fellow I ever saw, and he walks with his head high and his shoulders squared, a handsome lad; but the other slouches along, shoulders bent and head down. One cannot help but feel that their minds are like their bodies, and that the one will become a fine strong man doing worth-while things, a man every one is glad and proud to know; and that the other one will never be good for anything; not even," and he smiled half sadly, "not even for firewood!"

"That's it," said the farmer. "If you could only make them understand when there is yet time—when they are young; that would be fine. But boys are all alike, I fear. They will not listen to the counsel of older and wiser people. They want to go their own way, and when they get there, it is usually too late to turn back.

When the farmer and his friend had left the field, the crooked little Maple cried in despair: "Oh, Friend Oak, why did I not listen to you; why did I not try to stand straight and firm even though it was hard? Now it is too late, too late!"

The Oak and the Brother Maple sighed in sympathy with him, but they could do nothing.



Through the long, long winter this careless little maple had bent and swayed with the North Wind. And when the summer breezes blew and everything was turning green, he found he could not straighten his crooked back. He did not help himself when he could, and only *he* could keep himself straight.

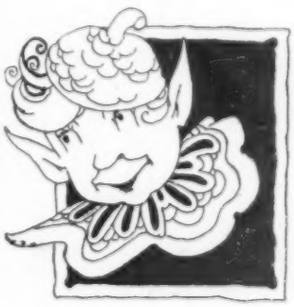
As he waited through the night for the next day, when the men were to cut him down and he was to die, he thought of the boy who was growing weak and crooked, and he longed as he had never longed for anything before for the power to speak to him—to tell him the lesson that had come to him from the wise Oak—the lesson that he had not heeded:

"Don't wait, don't wait until it is too late. Don't let your body grow bent and crooked until you cannot straighten it no matter how hard you try. Stand straight and strong and firm, so that your body and your mind too shall grow straight and strong and firm. Don't wait until it is—too late! Too late!"

That night the boy had a strange dream. He dreamed that he was the crooked little tree in Farmer Green's field. While it was Winter and the winds blew hard and cold, he did not mind being crooked. But, by and by, Spring came, warm gentle Spring, and he wanted to stand erect and draw deep, breaths of its soft air. But, try as he might, he could not straighten out his trunk and his crooked limbs.

Cold with terror, the boy awoke to find himself in his little white bed, all twisted and cramped into a ball. Cautiously at first he stretched his legs out straight and threw his rounded shoulders back flat and erect against the bed.

"How fine to be straight again," he said to himself in the darkness. "I'm going to try to keep this way always, and not be bent and ugly like Farmer Green's tree."



HEALTH NEWS AND VIEWS

HORSESHOE COMES BACK

The ancient and honorable game of horseshoe is being revived and is bringing back old-fashioned neighborliness in many towns and cities, says Mabel Travis Wood of the Playground and Recreation Association of America in a recent issue of *The American City*.

"An hour's pitchin'," says Miss Wood, "relaxes the muscles and nerves from the day's tension through active and not passive amusement. We have too many bleacherites nowadays who do nothing but sit on the sidelines and watch others play."

Modern life has stifled the community play instinct, and many leisure-time activities that should mean health and self-expression and friendliness have become commercialized, individualized and non-recreative.

One of the best things about horseshoe, says the article, is that it draws no age limit. Granddads who couldn't make a home run or compete in a community field day often come into fame for their canny horseshoe throwing. On the other hand, horseshoe makes a strong appeal to the younger element who have been known to desert the diamond for this other "national game."

In Meridian, Miss., Rotarians, Kiwanians and members of the Chamber of Commerce wage fierce horseshoe battles. The village blacksmith in Aberdeen, Wash., reports that that city used two and one half tons of horseshoes in the sport last summer. A city horseshoe club has been organized in Minneapolis and there are more than 300 courts on vacant lots.

Pacific & Atlantic

Girls, too, enjoy the old-time sport of horseshoe. These young women are civil service employees of New York City on their annual picnic.

Nor is interest in the game confined entirely to the sterner sex. In a number of cities, girls and women have developed a vary fair degree of skill in throwing the horseshoe. In the annual picnics held each summer by commercial organizations all over the country, the women employees frequently engage in "barnyard golf" contests.

EXCESS OF RICE CAUSES BERI-BERI

Beri-beri was discussed at a recent Congress of the Far Eastern Association for Tropical Disease held in Singapore in the autumn. The disease is of the utmost scientific interest, as well as of great economic importance to the countries of the far east. This peculiar form of infection of the nerves afflicts many persons and incapacitates them for work for a long period of time. It is now thoroughly established that it is a disease due to deficiency of diet, occurring mostly among those who live, for the most part, on polished rice.

Efforts to control the manufacture and sale of what is known as overmilled rice have not, so far, succeeded. One of the difficulties lies in the fact that such rice is not dangerous provided it forms only a moderate portion of the diet of an individual, other food being taken in the proper amount.

The International Health Board is devoting itself to the study and control of this disease, and there seems no reason why its efforts, if properly supported by the governmental agencies and the medical profession, may not be as successful as the campaign for elimination of the hookworm disease in the same countries.

MIXING STUDIES WITH SPORTS

Football and basketball do not produce the only school heroes at Harrisburg Academy, Harrisburg, Pa., under its present system of study and athletics.

There the new idea of mass athletics has been well developed and every one of the 200 boys in the school gets a chance to develop prowess in some form of sport on the athletic field. But while he pursues honors in sports, he must also study hard or he will loose caste among his team mates. The students are organized in some such fashion as this:

Every pupil in the 200 belongs either to the Greeks or the Romans, clubs which engage in rivalry both on the playing field and in the schoolroom. Assignment to either of these clubs takes place about three weeks after the opening of school each autumn, when the student captains of the Greek Club and the Roman Club have had time to gage the boy's physical and scholastic ability. Then the two captains choose alternately from the boys, keeping in mind both their classroom and the athletic records.

Every school activity, athletic, forensic, dramatic, and scholastic, is worked into this Greek-Roman scheme, and at the end of each month the honors and failures of the members are charged to each club.

It has been found that the scholastic standing of those most prominent in athletics is higher, under this scheme, than of those whose interest in contests and games soon languishes.

Pacific & Atlantic

International Newsreel

FINDING PARENTS

So many people in Los Angeles want to adopt children that a special courtroom has been set aside in which are heard petitions for adoption. Few persons adopt children nowadays without first learning enough of their parentage to know that they are free from physical and mental taint.

LONDON WOMEN FIGHT FIRE

London has some women firefighters thoroughly trained in rescue work. Burberry's of the Haymarket has organized a fire brigade among women employees, and they, under the instruction of professionals have become expert firefighters.

WASHINGTON ELM DIES OF OLD AGE

Death has at last taken the noble and historic Washington elm at Cambridge, Mass., under which the father of our country assumed command of American troops. The tree toppled over the other day, as is shown in the photo.

Pacific & Atlantic

ROVER VISITS THE DOCTOR

What if your pet poodle had the measles? One little girl thinks hers has and she has taken the dog to the Ellis Speyer Hospital for Animals (New York City) to be treated. There it can be properly isolated, in order to prevent a measles epidemic in Dogtown. All these pets are waiting the attention of a dog doctor.

Pacific & Atlantic

Pacific & Atlantic

SO THIS IS NEW YORK

Three rugged little Redskins pose on the steps of City Hall in New York. They are members of the Flathead Tribe from the Northern Montana Reservation and came with their parents to the big city to take part in a rodeo. The smallest of the trio seems to find New York not altogether to his liking.

BOTH DUSKY AND HUSKY

These strong, dusky girls in New Britain, Australia, carry water for miles and do not tire. For one reason they do not break down their young strength by dragging heavy water jars, but carry the water inside bamboo poles, which are plugged at one end.

International Newsreel

International Newsreel.

A CLASS IN SLEEPING

The daily nap was not a part of the curriculum when most of us went to school. It is a regular class period in the day's routine for undernourished children in the schools of New York City, where recently a health drive has been undertaken by the public health commission.

H. G. WELLS PLAYS GODFATHER

H. G. Wells, the British author, acted in the rôle of godfather to many poor and homeless children when he recently opened the Children's House at Ealing Road Bow, London.

Pacific & Atlantic

BATHING AS USUAL

Baby-San gets his daily bath, even though the great city about him lies in ruins. Natives in Yokohama are said to be "housekeeping as usual" since the earthquake, and many have taken up their abode amid the wrecks of their former dwellings.

International Newsreel

GUARDING AGAINST WATER-BORNE DISEASE

The sixth annual short course of water works and filter plant operators of Texas will be held in Waco, Texas, January 21-26, the Texas Water Works Association, the State Board of Health, the Waco City Water Works, Waco City Health Department, and Baylor University cooperating.

These courses of instruction were inaugurated by the Texas State Board of Health in 1919. The response has been so cordial that they have been continued, with each year showing a substantial increase in enrollment. The primary purpose of the school is to decrease water-borne diseases in the smaller municipalities by training the operators in the approved methods of producing pure water. This is accomplished through lectures on such subjects as coagulation and sedimentation, filter operation, and chlorination. For instruction in chemical and bacteriological control actual work is done in the laboratory.

The intelligent, expert conduct of such public health services as the care of water supplies, based on careful instruction and training of the employees detailed for this work, is the most essential step in guarding against water-borne disease.

NOT PROPERLY NOURISHED

Rosy cheeks, such as every school boy and girl should rightfully display, are really possessed by only three out of every four little pupils in the schools of America.

The fourth little pale-faced child lacks color, because he is not properly nourished, or, as his doctor would say, he is suffering from malnutrition.

Malnutrition is by no means confined to poor children, whose parents are unable to provide them with healthful foods. The children of the rich are quite as apt to be underweight and underdeveloped physically.

Some of the causes of malnutrition are obstructions in the nose and throat which interfere with breathing; decayed teeth, which breed germs and interfere with chewing; too little sleep; lack of fresh air; and even constant nagging.

The committee on foods and nutrition of the National Child Health Council, in cooperation with the United States Public Health Service, recently has made a survey of the health of school children and it has found this great percentage of under-nourished children.

WHERE THE PLAGUE ORIGINATED

The original home of the plague was discussed by Dr. Wu Lien Teh, one of the Chinese delegates to the Congress of the Far Eastern Association of Tropical Medicine held in Singapore last autumn.

Dr. Lien Teh, an authority on this subject, said that it is difficult to draw any sharp line as to where the original focus of the plague was situated, but it seems quite clear that it was in central Asia. In this region epidemics seem to originate, and from there they spread. The animal playing the principle rôle in the causation of this disease is the tarabagan (Siberian marmot), but numerous other rodents in this region are doubtless involved.

The Black Death of the fourteenth century originated in inner Asia, that "land of darkness" of Arabian historians, and thence spread to India, China, and to Europe. In later years the domestic rodents, especially the rats, have been the principal agencies in the transmitting of the plague to human beings. But the original host of the insect which transmits the plague to man seems to have been the marmot.

Dr. Lien Teh says that we are confronted with four possibilities in the transmission of the plague to man, namely: eating of the flesh by man, the inhalation of the organisms by man, direct transmission through an open wound in man, and indirect transmission through animal parasites.

Modern sanitation and hygiene have practically eliminated the plague from highly civilized nations, but it is still a deadly menace in the Oriental countries, causing man thousands of deaths yearly.

TEACH TEMPERANCE THROUGH SPORTS

Athletes' records are the most convincing evidence to the school boy of the injurious effects of the use of alcohol, Austrian school doctors have decided.

Teachers have been asked to lay aside the old chart with its colored representation of alcohol-ravaged organs and to appeal in a method not so far removed from the child's interest.

In the Austrian schools use is made of statistics, collected by Durig of record holders among German athletes, which show the absolute superiority of total abstainers over even moderate drinkers. This is said to be a revelation to boys and young men in a country where most persons believe that a moderate consumption of alcohol is in no way detrimental.

Students also are taught that drinkers are more subject to disease and illness than non-drinkers, and statistics of insurance societies are quoted to show that the alcohol-consuming classes are an easier prey for disease than other classes. This method is designed to appeal to the instinct of self-preservation.

From the acceptance of the teaching that alcohol has a deleterious effect on the body, it is a short step to the lesson that the mind also is affected.

PLAYGROUNDS FOR GROWN-UPS

Grown-ups, as well as children, in Belgium are to be provided with public playgrounds. Last summer the Belgian Red Cross took up the question of providing places in the various cities where adults might gather for games and sports. An extension of children's playgrounds also was planned. Next summer will see many of the Red Cross committee's plans put into action, it is said. The Belgian Red Cross organization believes that playgrounds are just as essential as hospitals, dispensaries and other modern agencies of public health.

HEALTH ROOMS IN SCHOOLS

Every school in the state of Pennsylvania must have a "health room." Beginning this month the bureau of school buildings of the state department of public instruction is not to approve new buildings in which health rooms are not provided.

The health room, in most instances, will be a medical inspection or nurses' room, but it will be called a "health room" to emphasize the constructive side of health activities and to impress upon pupils, parents and teachers the fact that health supervision is more than mere examination of children for contagious diseases or physical defects.

NEED NOT DIE IN POOR HOUSE

Old age pensions cost less than poor house care, in the belief of three states which last year have passed laws granting financial aid to the destitute aged.

Montana, Nevada and Pennsylvania enacted old age pension legislation of a similar type. Any person 70 years old or more, having no income or an income which does not exceed $300 a year, is entitled to receive a pension of $25 a month, minus the amount of his income.

This type of care is believed by many persons to be preferable to residential support in a county home.

BOOK REVIEWS

PRINCIPLES OF HOME NURSING: A textbook for college students. By Emma Louise Mohs, R.N., A.B., Member of Department of Child Hygiene and Public Health, State Teachers' College, Kirksville, Missouri. Cloth. $2.00. Pp. 307. Illustrations 122. W. B. Saunders Company. Philadelphia and London. 1923.

HOME NURSE'S HAND BOOK: By Charlotte A. Aikens, Formerly Director of Sebley Memorial Hospital, Washington, D. C., Superintendent of Columbia Hospital, Pittsburgh, and of Iowa Methodist Hospital, Des Moines. Third edition. Cloth. $2.00. Pp. 314. Illustrations 66. W. B. Saunders Company. Philadelphia and London. 1922.

About 90 per cent. of persons who are ill in bed are cared for in their homes. More than 80 per cent. have at no time during their illness the services of a trained nurse. This is the estimate in normal times. During a great epidemic like that of the influenza in 1918-19 the proportion of the sick who can command professional nursing is much less.

Fortunately in a large part of the illness which affects us such nursing care as is needed can be furnished by members of the household who are not ill, with the occasional aid of the neighbors. Their care, however, could be made very much more effective if knowledge of the simple methods and appliances used in the care of the sick was more widely diffused. Every young woman should be taught something about the principles and technic of nursing in the home as an essential part of her preparation for wifehood and motherhood. Every young man ought also to have some knowledge of nursing to prepare him for an emergency. It is the purpose of these textbooks to furnish such instruction.

Miss Mohs has written a book especially designed for the instruction of college students. The chapters describing the proper attitude and conduct of the nurse in the sick-room, the sick-room and nursing appliances, well illustrated, are brief but comprehensive. The hypodermic syringe, however, should be omitted from any such equipment; only a registered nurse ought ever to administer drugs hypodermically, and she should do so only under the specific direction of the physician.

We fail also to see the propriety of picturing the stethoscope and the sphygmomanometer, and of describing the routine of physical exploration, and of discussing in such detail the signs and symptoms of several diseases. One of the most important things to be impressed on the mind of the "home-nurser," as well as on the trained nurse, is that she is *not* to undertake duties which belong to the physician only. Discussion in a textbook of this sort of procedures which can be safely conducted only by the physician are unnecessary and out of place in a book on nursing. The chapters on first aid, including bandaging, are clearly written and well illustrated, as are those on the care of the baby.

Miss Aikens' book is written "for use in home nursing classes in Young Women's Christian Associations, in schools for girls and young women, and as a working textbook for mothers, practical nurses, trained attendants, and all who have the home care of the sick." It must presume, therefore, a somewhat lesser degree of education on the part of its readers than is possessed by the students of Miss Mohs' textbook, written for college students. The order of topics followed is much the same, as are the illustrations. A series of review questions are placed at the end of each chapter. This, the third edition, has been thoroughly revised and new chapters on the health of the child have been added.

The fact that this book has come to a third edition in less than ten years is evidence of a gratifying demand for instruction in home nursing by those who are, and by those who expect to become, homemakers.

LESSONS IN THE CARE OF INFANTS FOR USE IN SCHOOLS: By Mrs. Watson. New edition, revised with preface and introduction by Benjamin Broadbent, C.B.E., LL.D., M.A., J.P. Pp. 19. Paper. Twenty cents. Longmans, Green and Company, New York.

There are some elementary and simple truths that all girls ought to know about babies: how to feed, clothe, and keep them clean, and something about their food and sleep.

This little booklet by Mrs. Watson intended to be used in schools for girls from 10 to 13 years of age has met a real need in Great Britain, and this revised edition is called for. In simple language are told the facts about the baby and its care. First is described its food, accompanied with simple instructions as to the care of the milk, mixing of the food, and how it should be given, and what things to avoid. The bathing and dressing of the baby, its care and exercise are described in a chapter on the general health and care of the baby, and questions for review are contained in a final chapter.

Every girl should be taught the essential things about home nursing as soon as she is old enough to comprehend such instruction. The age of ten is not too young to begin such instruction.

HEALTH TRAINING IN SCHOOLS: By Theresa Dansdill. National Tuberculosis Association. 1923.

"Health Training in Schools" is a handbook for teachers and health workers prepared for the National Tuberculosis Association by Theresa Dansdill. It is offered as a comprehensive course of study in practical hygiene for state and school systems, to be used by the teacher as a guide and source book. The first chapter presents in outline form the material to be used in the first eight grades. The remaining chapters of the book consider in full the material referred to in Chapter 1.

The arrangement is good, and the selection of material satisfactory. Emphasis on health habits is prominent, and pleasing use is made of the play and game elements in health instruction. On the whole, the book is thoroughly dynamic, indicating the modern point of view in general education by its application to the specific problems of health instruction. The great danger in all health teaching is the development of an unwholesome interest in health and bodily processes. It is to be regretted that this otherwise excellent book does not point out to the teacher this danger, and indicate ways in which it may be avoided.

One feature of the book deserving generous approval is the bibliography. This is extensive and detailed, and while not annotated, the National Tuberculosis Association offers to supply annotations on the books listed. Sources where posters, panels, plays and pageants relating to health may be secured are given. Altogether this book is the most helpful source book to graduates that has yet been published.

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. Questions are submitted to recognized authorities in the several branches of medicine and answers framed by them. The names of correspondents will not be published. Diagnoses in individual cases will not be attempted nor treatment prescribed.

Removing Smallpox Scars

To the Editor:—I would like to know the truth as to whether pits or scars left by smallpox can be removed. D. C., Kansas.

Answer.—There is no way of removing satisfactorily the pits or scars left by smallpox, except in certain instances in which the amount and depth of the pitting is so small as to permit treatment.

It is the opinion of a competent specialist on diseases of the skin that nearly all cases can be improved, although the treatment may be long and require much patience and care. In the treatment, which should preferably be conducted by some one who has given special attention to the diseases of the skin, a corrosive acid is applied to the scar at its edge, after the center of the scar has been coated with a protective layer of oil. The result is, of course, that the depression is made to "shade off" into the surrounding skin instead of being sharply demarcated.

It should be made clear that the treatment is an experimental one to be tried on a small scale first, and that it may require from six months to a year to secure satisfactory results.

Lumps in the Breasts

To the Editor:—In an article on cancer, in one of last evening's papers, mention was made of a "woman hiding lumps in her breast." Last evening over the radio, a representative of HYGEIA made a splendid talk and invited questions. May I suggest that you tell mothers about the lumps which require treatment or operation. The case of my wife fits exactly 90 per cent. of our acquaintances who have borne children. Shortly after the birth of our baby one breast became very inflamed and sore. The doctor examined it and said that if the inflammation continued he would have to lance it. The inflammation subsided but ever since that time a large lump is present, not painful and never inflamed. Older people have told her it is "caked" and some talk of "caked milk." For the benefit of my wife and myriads of other mothers bothered in this way, what can you tell me? H. L. V., Illinois.

Answer.—A lump in the breast which appears shortly after the birth of a baby, and which after one year has not disappeared should be examined at once by a competent surgeon.

It is quite possible that the lump is not really a *definite* lump, but only a part of a "lumpy" breast, which is quite common after the baby stops nursing. If examination by a competent surgeon reveals only a "lumpy" breast and no single really definite lump, there should be no reason for anxiety and no necessity for any operation or treatment.

If the examination reveals a really definite lump, there should be an operation *at once* in a good hospital. The object of this operation is to remove the lump if it is *not* cancer, save the breast and protect the patient from cancer. If the lump is suspicious of early cancer or *is cancer*, then the breast and the contents of the arm pit must be removed to save the patient from death from internal cancer. Neither operation is dangerous. The only danger is delay.

Any woman over 25 years of age, who feels a lump in her breast today, should be examined tomorrow. This examination will often reveal the lumpy breast or other conditions of the breast that will disappear and require no treatment. But if a definite lump is found, the patient has at least a 50 per cent. chance that the operation will remove the lump only and will save the breast. If the breast must be removed, it offers the patient the best possible chance of a permanent cure. Most women do not "hide" lumps in the breast; they delay giving them attention because there is no pain and because they are ignorant of the danger of the lump in the breast.

Acne
Peeling Off of Skin Between Toes

To the Editor:—We are using HYGEIA in our physiology class in high school and find it affords excellent supplementary material. I desire to take advantage of your good offer under Questions and Answers. (1) Is there a cure for acne, and if so how should it be treated? What causes acne? (2) How may one cure a perspiration, blistering and peeling off of the skin between the toes? What causes such a condition? L. L. B., Kansas.

Answers.—1. Acne can be treated successfully but considerable time is required. No single method is successful in all cases. Both internal and external treatments have been employed in most cases. The treatment should be carried out under the direction of an experienced physician. As to causes, they are both local and constitutional, the local being parasitic and the constitutional causes being many and varied.

2. Blistering and peeling off of the skin between the toes is, as a rule, an infectious condition produced by a vegetable organism similar to that which produces ordinary ringworm. The diagnosis should be proved with a microscopic examination. After that proper treatment can be recommended.

Goiter and Pregnancy
Causes of Stillbirth

To the Editor:—1. Does pregnancy sometimes cause goiter? Is such a goiter likely to disappear spontaneously after the termination of pregnancy? Should such a goiter have treatment? What sort of treatment?

2. What are the causes of death of the fetus prior to birth, exclusive of malformation or malposition of mother's organs, extra-uterine pregnancy, strangulation, accidents to the mother during pregnancy, or such physical conditions of the mother as would be indicated by urinalysis?

3. Does death of the fetus prior to birth occur more frequently during first than during subsequent pregnancies? H. S. R., Illinois.

Answer.—1. In four-fifths of all pregnant women, the thyroid gland undergoes some enlargement during pregnancy. It should not, however, be regarded as a goiter, as it disappears spontaneously after delivery. This physiological enlargement was known to the old Romans, who utilized it in the popular diagnosis of

pregnancy. The upper class young woman was given a snugly fitting gold band necklace at marriage, and when it became so tight as to be uncomfortable, it was assumed that pregnancy had occurred.

In women with preexisting goiter, the process is occasionally aggravated during pregnancy, but returns to its original condition after delivery. Very exceptionally, the thyroid may increase to such an extent as to cause pressure symptoms which require prompt operative treatment. Except for this, goiter complicating pregnancy rarely requires treatment.

2. In the lower walks of life syphilis, the existence of which is usually unsuspected by the mother, is the most frequent cause of the death of the fetus (the unborn child). Less commonly disease may lead to the obstruction of the blood supply so as to interfere with the nutritive function and thus lead to death of the fetus; while occasionally no cause for the accident can be discovered even though it occurs in successive pregnancies.

3. Except when due to syphilis, death of the child prior to birth occurs more frequently in later rather than in first pregnancies. The reason for this lies in the fact that the older the mother, the greater are the chances for the development of any one of a number of abnormalities. At the time of birth, on the other hand, death of the child is much more likely to occur in a first rather than in later labors.

Arthritis

To the Editor:—Please give me some information about arthritis. What forms are there, and which, if any, are curable? If not curable is it capable of being helped by treatment? Can you advise as to treatment and cause of that type which is accompanied by swollen and painful joints, great suffering, and a stiffness which renders standing and walking difficult.

S. W., Ohio.

Answer.—Arthritis (joint inflammation involving joint surfaces or any of the tissues which go to make up the joint structure) is more commonly known as articular rheumatism. Most cases are curable, particularly if received for treatment at the onset of the illness and if the cause of the disease, as well as the type of arthritis, is ascertained.

No particular or specific treatment can be given to cover all cases, each case needing careful study and supervision. Treatment can then be instituted which seems best for each case in question. In general, however, treatment is governed by certain broad principles such as:

Rest, avoidance of mental or physical fatigue, plenty of good nutritious food, good hygiene, tonic baths, removal of any points of infection, hot applications to inflamed joints; and such drugs as are indicated. Such adjuncts to treatments as electricity, various lights, massage, passive and active exercises and similar measures are helpful in selected cases.

Pyorrhea

To the Editor:—Have you something on pyorrhea of the teeth that the common civilian can read? I want to know about the germ and manner of infection. Is pyorrhea related to gonorrhea? Is there danger of infection from drinking from the same cup?

Mrs. J. E. H., Indiana.

Answer.—Pyorrhea is a disease which begins in the margins or edges of the gums and very slowly involves and destroys the tissue which attaches the root of the tooth to the bone of the jaw, thus forming a pocket along the side of the root. So far as is known, the minute animals causing the tissue destruction are those which are found in practically all mouths; they are not very injurious, or active, in destroying tissue. Therefore, as a rule, the gum margins are first injured by some local irritation, or their resistance to infection is lowered by systematic disease or by "general lowered vitality"; otherwise these minute animals could not penetrate the gum tissue. They do not do so while the gums are healthy.

Most cases of pyorrhea begin with a very slight irritation of the gum margin, such as might result from the wedging of particles of food between the teeth, from rough edges of fillings or crowns, or from the forcing of toothpicks, especially wooden toothpicks, between the teeth. These trivial irritations may go on for months without serious infection, but sooner or later it is almost certain to occur and then gradually it progresses along the root.

There is no relation between gonorrhea and pyorrhea. Pyorrhea is not to be considered a contagious disease, and there should be no danger of getting a pyorrheal infection from a drinking cup. There are good reasons, however, why the common drinking cup should be avoided.

Transplanting Hair Follicles

To the Editor:—I am interested in finding out the depth of the insertion of hair follicles in the skin—scalp, eyebrows and surface epithelium, such as the arms. It would be of great assistance to me if you would either refer me to statements or briefly state the figures. Is it not true that hair follicles may be transplanted from one part of the body to another through grafting? I have heard that skin removed from one arm to the other would "take," the hair continuing to grow. How much work has been done along these lines?

E. G., Michigan.

Answer.—As far as can be determined from a search of literature, no one has made accurate measurements of the length of the hair follicles in different areas of the body. In general, the long hairs on the scalp have a greater depth of "insertion" than the short hair of other regions of the body. The hair follicles can readily be transplanted with the skin, but the hair follicles produce their characteristic hairs after transplantation.

Diphtheria Toxin-Antitoxin
Vaccinating for Colds

To the Editor:—(1) If a child takes three shots of diphtheria toxin-antitoxin will it be permanently immunized against diphtheria? (2) What is your opinion on vaccination against a cold?

W. J. K., Indiana.

Answer.—1. The immunity (power to resist any particular disease) which follows the injections of diphtheria toxin-antitoxin develops gradually and may require several months to reach its height. When once present it persists a considerable time, at least several years. In a relatively few children the injections are not followed by immunity. These often become immune if the injections are repeated. About three months after children are given the injections of toxin-antitoxin, they should be tested by the Shick method. Those who have a negative result are immune. Those who have a positive result are not immune and should have the injections repeated.

2. It is very doubtful whether any benefit follows vaccination against "colds." Sometimes persons appear to have their resistance to colds raised in this way. In the absence of any accurate information as to the essential cause of the varied conditions which pass under the designation "colds," the preparation of a universally efficient vaccine is impossible.

HEALTH REVIEWS

EPIDEMICS SPREAD THROUGH LIGHT CASES

Children who have scarlet fever in a light form are responsible, in the majority of cases, for spreading the disease, says Dr. Charles Gilmore Kerley in an article in the December issue of *McCall's* magazine on "Safeguarding the Child." So it is with most epidemics of children's diseases; the greatest danger comes from cases not recognized or quarantined.

Often mild scarlet fever rashes are interpreted by the family, and sometimes by the doctor, as due to digestive disturbances, particularly if accompanied by fever and vomiting, Dr. Kerley says. This disease, because of the possibilities of an indefinite rash, is overlooked more than any other disease of this class. It is not unusual for school inspectors to find children who are "peeling off" following scarlet fever in attendance at school, who have not been ill.

To what degree clothing, books and toys may be infected and act as carriers of contagious disease is not known, the writer declares. Of only three infective diseases is the nature of the infection positively determined. These are diphtheria, meningitis and tuberculosis, all of which are due to germs. The danger of spreading a disease is largely through personal contact, but it is not wise to allow wearing apparel, books or toys used by patients to come in contact with persons who have not had the disease.

Certain of the communicable diseases are not regarded as of great danger to life; these are German measles, mumps and chickenpox. They are an inconvenience and interfere with school work, but are rarely fatal.

Measles, whooping cough and scarlet fever, on the other hand, are classed as dangerous. Diphtheria, formerly greatly dreaded, has been robbed of its terrors through inoculation and the use of the serum "antitoxin" in its treatment. Smallpox may be prevented in a large degree by vaccination. The death rate of cerebrospinal meningitis has been reduced from 85 to 35 per cent. through the use of serum. In infantile paralysis and tuberculosis, much can be accomplished by not allowing children to come in contact with persons suffering from these diseases.

JOBS FOR PERSONS WITH HEART DISEASE

Three per cent. of all persons between 30 and 65 have heart disease, it is believed.

In an article in a recent number of the *Archives of Occupational Therapy,* Dr. Frederic Brush, medical director of the Burke Foundation at White Plains, New York, says that in order to save these productive-period citizens there should be established more special heart clinics, increased social service, better adapted hospital and dispensary treatment, country convalescence facilities, adequate beds for the more serious cardiac cripples, an employment bureau for the handicapped, means to bring about constant work-adjustments within the industries, schemes to increase periodic health examinations in the heart group, and active public health education.

Country convalescence is a recognized essential in any improvement scheme for adult heart disease, says Dr. Brush. Suitable employment is another. Nothing relapses adult heart disease like job-hunting, which so frequently ends in the desperate taking of the wrong job.

It is said that all persons with heart disease of fair workable power and reserve can be made wage earners in the industrial world, without the aid of vocational schools and special factories. Numerous examples can be cited: A large construction company holds all of its "watchman" and like jobs for persons with heart disease.

Vocational training may be all right for young people with heart disease, the article points out, but for the adult vocational training must be "on the job." The best prescription for middle-grade heart disease is the pay-envelope, so definitely does not being able to work weaken and depress the person, and his family.

SOME INTERESTING FACTS ABOUT *HYGEIA* WRITERS

Harry C. Phibbs is an outdoor enthusiast and cameraman. He will be remembered as the author of "Outdoor Americans," a nature sketch in the August issue.

L. Emmett Holt is known to all mothers through his book, "The Care and Feeding of Children." He is clinical professor of diseases of children in a New York medical school. Dr. Henry Larned Keith Shaw also is known as an authority on diseases of children. He is consultant on child hygiene to the New York State Department of Health.

Mrs. Mary Koll Heiner is an instructor in home economics at the University of Chicago. During the World War, she was connected with the Oregon Agricultural College in canteen service, and it was there that she had opportunity to carry on on a large scale the time study in household efficiency which is such a valuable part of her paper.

William Byron Forbush is an ordained Congregational minister and author. The International Order of Knights of King Arthur, the largest fraternity of church boys in the world, was founded by him. He has written numerous books on the moral and religious training of the young, besides magazine articles on a variety of subjects.

Kate Campbell Mead is a physician and is president of the Medical Women's National Association. She is a frequent contributor to medical and lay journals. Louis W. Sauer is a practicing pediatrician. Virgil Loeb is a professor of oral surgery. During the World War he was consultant in facial surgery in France, where he was a major in the medical corps.

I. K. Russell is the editor of a trade publication and has as his hobby research in early American history. Lydia J. Roberts teaches home economics in the college of education, University of Chicago, and has been in charge of special classes for undernourished children. Sarah Comstock is a free lance writer of articles dealing with home problems.

Michael Vincent O'Shea, a University of Wisconsin professor, is the author of many works on education and of numerous text books. He has served on various international committees on education and is known as a lecturer on education and related subjects in this country and abroad. Loyd Thompson, an Arkansas physician, is editor of the *American Journal of Syphilis* and is the co-author of several books on syphilis and epidemic diseases.